

construction
engineering
research
laboratory



United States Army
Corps of Engineers
...Serving the Army
...Serving the Nation

Technical Report P-102
May 1979

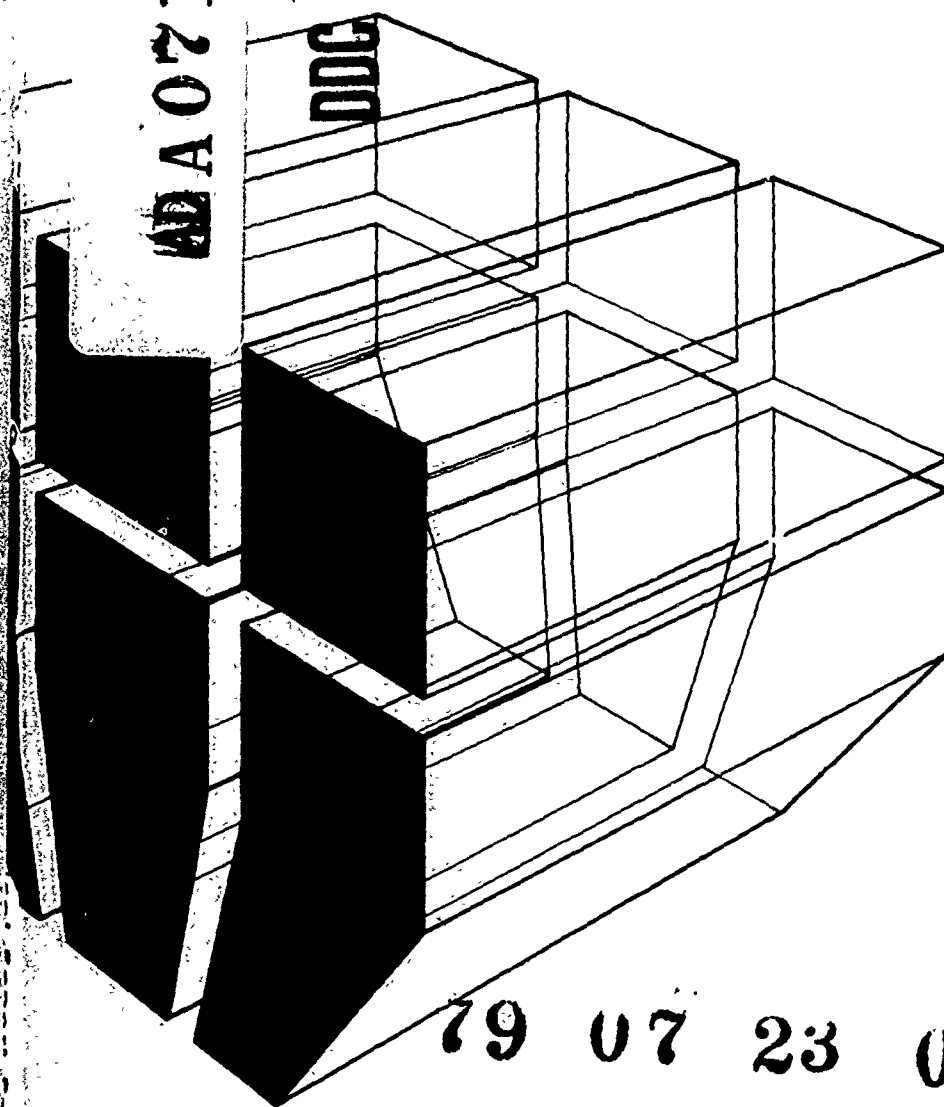
LEVEL



DEVELOPMENT OF GUIDELINES FOR THE
ARMY TIMBER HARVESTING PROGRAM

ADA 071 637

DDC FILE COPY



by
A. W. Moore
G. A. Parsons
R. E. Ramsson

DDC
RECEIVED
JUL 25 1979
RECEIVED
D

79 07 23 060



Approved for public release; distribution unlimited.

The contents of this report are not to be used for advertising, publication, or promotional purposes. Citation of trade names does not constitute an official indorsement or approval of the use of such commercial products. The findings of this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

**DESTROY THIS REPORT WHEN IT IS NO LONGER NEEDED
DO NOT RETURN IT TO THE ORIGINATOR**

USER EVALUATION OF REPORT

REFERENCE: Technical Report P-102, *Development of Guidelines for The Army Timber Harvesting Program*

Please take a few minutes to answer the questions below, tear out this sheet, and return it to CERL. As a user of this report, your customer comments will provide CERL with information essential for improving future reports.

1. Does this report satisfy a need? (Comment on purpose, related project, or other area of interest for which report will be used.)

2. How, specifically, is the report being used? (Information source, design data or procedure, management procedure, source of ideas, etc.)

3. Has the information in this report led to any quantitative savings as far as man-hours/contract dollars saved, operating costs avoided, efficiencies achieved, etc.? If so, please elaborate.

4. What is your evaluation of this report in the following areas?

a. Presentation: _____

b. Completeness: _____

c. Easy to Understand: _____

d. Easy to Implement: _____

e. Adequate Reference Material: _____

f. Relates to Area of Interest: _____

g. Did the report meet your expectations? _____

h. Does the report raise unanswered questions? _____

i. General Comments (Indicate what you think should be changed to make this report and future reports of this type more responsive to your needs, more usable, improve readability, etc.) _____

5. If you would like to be contacted by the personnel who prepared this report to raise specific questions or discuss the topic, please fill in the following information.

Name: _____

Telephone Number: _____

Organization Address: _____

6. Please mail the completed form to:

Department of the Army
CONSTRUCTION ENGINEERING RESEARCH LABORATORY
ATTN: CERL-SOI
P.O. Box 4005
Champaign, IL 61820

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER 14 CERL-TR-P-102	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) 6 DEVELOPMENT OF GUIDELINES FOR THE ARMY TIMBER HARVESTING PROGRAM	5. TYPE OF REPORT & PERIOD COVERED 9 FINAL rept.	
7. AUTHOR(s) 10 A. W./Moore A./Parsons R. E./Ramsson	8. CONTRACT OR GRANT NUMBER(s) Reimbursable	
9. PERFORMING ORGANIZATION NAME AND ADDRESS U. S. ARMY CONSTRUCTION ENGINEERING RESEARCH LABORATORY P.O. Box 4005, Champaign, IL 61820	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 12 174p.	
11. CONTROLLING OFFICE NAME AND ADDRESS Guy	12. REPORT DATE 11 May 1979	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)	13. NUMBER OF PAGES 169	
	15. SECURITY CLASS. (of this report) Unclassified	
15a. DECLASSIFICATION/DOWNGRADING SCHEDULE		
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Copies are obtainable from National Technical Information Service Springfield, VA 22151		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Logging Army Corps of Engineers 405 279 Jim		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report presents (1) guidelines for the Army Timber Harvesting Program's timber harvesting activities; (2) a suggested contract format to promote uniformity of timber harvesting contracts throughout the Army; and (3) an examination of timber harvesting activities and their relation to timber management functions to determine recommendations for improvements in the Army's timber harvesting service.		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

FOREWORD

This study was conducted for the Directorate of Real Estate, Office of the Chief of Engineers (OCE), as a reimbursable project. The OCE Technical Monitor was Mr. E. W. Merli.

The study was performed by the Facility Systems Division, U.S. Army Construction Engineering Research Laboratory (CERL). Mr. E. Lotz is Chief of FS.

Appreciation is expressed to Mr. Guy A. Parsons, South Atlantic Division Forester, for his assistance in conducting the study.

COL J. E. Hays is Commander and Director of CERL and Dr. L. R. Shaffer is Technical Director.

Accession For	
NTIS G.A.I.	<input checked="checked" type="checkbox"/>
DDC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist.	Avail and/or special
A	

DDC
RECEIVED
JUL 25 1979
D

CONTENTS

DD FORM 1473	1
FOREWORD	3
LIST OF TABLES AND FIGURES	5
1 INTRODUCTION.....	7
Background	
Objective	
Approach	
2 ANALYSIS OF ARMY FOREST MANAGEMENT OPERATIONS.....	9
Background	
Major Operations	
Costs and Revenues	
3 ANALYSIS OF CORPS OF ENGINEERS TIMBER HARVESTING OPERATIONS....	18
Background	
Operations	
Problems and Trends	
Costs and Revenues	
4 ANALYSIS OF OTHER AGENCIES' FORESTRY OPERATIONS.....	29
Agencies Analyzed	
Comparison of the Army With Other Agencies	
5 CONCLUSIONS.....	37
Installation Management Operations	
Corps of Engineers Timber Harvesting Operations	
Comparison of Army Forestry Operations With Other	
Agencies' Forestry Operations	
6 RECOMMENDATIONS.....	39
Installation Management Operations	
Corps of Engineers Timber Harvesting Operations	
Organizational Structure	
REFERENCES	41
APPENDIX A: Suggested Contract Format	42
APPENDIX B: Timber Harvesting Guidelines for	
Major Army Installations	69
APPENDIX C: Questionnaire	152
DISTRIBUTION	

TABLES

<u>Number</u>		<u>Page</u>
1	Cash Costs and Revenues of the Army Forestry Management Program, FY67 Through FY76	17
2	Analysis of Military Timber Harvesting Cost, Income, and Labor Requirements by District Base Period, FY74 Through FY76	26
3	Average Annual (FY) Cost and Income Ratio With Total CUNITS Harvested by District for FY74 Through FY76	28
4	Comparison of Army, Navy, and Air Force Receipt -- Expenditures, FY71 Through FY76	33

FIGURES

1	Line of Authority for Timber Management	11
2	Lines of Authority for Timber Harvesting	19
3	Organizational Relationship Between Timber Management and Timber Harvesting Operations	23
4	Air Force Forest Management Organization	30
5	Navy Forest Management Organization	31
6	Forest Service Organization	32

DEVELOPMENT OF GUIDELINES FOR THE ARMY TIMBER HARVESTING PROGRAM

I INTRODUCTION

Background

About 1.5 million acres (607,000 ha) of forest land are presently managed by the U.S. Army. The estimated value of the timber standing on this land approaches \$350 million. Thus, forest management and timber harvesting are of great practical importance to the Army. The conduct of these operations on military installations is governed by Army regulations. In the case of timber harvesting, however, these regulations are not comprehensive. Since timber harvesting is essential to quality timber management, updated guidance for timber harvesting activities is urgently needed to guarantee the quality and integrity of the Army's forests.

Objective

The purpose of this study was to develop recommendations for necessary procedures and guidelines for the Army's timber harvesting program based on an analysis of that program and of the Army's forest management program. The resulting recommendations concern the activities required to effectively dispose of timber from military lands in such a manner as to achieve the highest possible financial yield without interfering with the installation's mission or the ecological interdependence of all natural resources. The recommendations are presented in a suggested format for a uniform Army timber-scale contract and as guidance for timber harvesting activities at major installations.

Approach

The study was divided into five phases: (1) data collection, (2) analysis, (3) development of draft procedures, (4) review by field personnel, and (5) development of conclusions and recommendations.

Data were collected by examining forest management and timber harvesting operations at selected installations and Districts and at the major commands. The installations were selected to represent the various environmental conditions experienced in the Army program. Forest management and harvesting practices of the Navy, Air Force, and Forest Service were studied for possible use by the Army in improving its program.

The information gathered was then analyzed and used in preparing a draft of a standard timber-sale contract (Appendix A). A pamphlet from the Savannah District, entitled Operational Procedures for Timber Harvesting Projects, was examined to identify areas requiring revision. The pamphlet was adapted to serve as a guideline for timber harvesting (Appendix B).

The drafts of both the contract and the pamphlet were distributed to Corps of Engineers field personnel at a timber harvesting workshop held in Atlanta, GA, on 5 to 8 April 1977. Prior to the workshop, a questionnaire (Appendix C) was mailed to field personnel to elicit their responses to a variety of concerns regarding timber harvesting activities. Workshop participants also completed this questionnaire. At the workshop, important harvesting activities were examined in detail and a consensus was reached regarding operational procedures. Following the workshop, the questionnaires and the comments on the contract and pamphlet drafts were reviewed. On the basis of the information obtained, conclusions and recommendations about the Army's timber harvesting program were formulated and final drafts of the contract and pamphlet were prepared.

2 ANALYSIS OF ARMY FOREST MANAGEMENT OPERATIONS

Background

The Army's forest operations are unique in that (1) timber management responsibility is separate from timber harvesting responsibility, and (2) the highest priority is given to facilitating military training. Each Army installation is responsible for managing its timber resources under authority of AR 420-74,¹ while responsibility for timber harvesting is granted to the Corps of Engineers by AR 405-90.² This chapter addresses timber management by Army installations.

Relation to Natural Resources Program

According to AR 420-74, forest management is part of the larger natural resources program and is the responsibility of the Facilities Engineer (FE) at the installation. AR 420-74 describes the objectives of the natural resources program as follows:

- a. Develop, initiate, and maintain progressive programs for land management and use.
- b. Maintain, protect, and improve the environmental qualities, esthetic value and ecological relationships by:
 - (1) Protection of real estate investment from depreciation.
 - (2) Compliance with environmental protection and enhancement policies and procedures as outlined in AR 200-1.
 - (3) Protection and improvement of the natural beauty of the landscape.
 - (4) Improvement of the appearance of installations and facilities by appropriate landscape development.
 - (5) Prevention of damage and destruction of valuable natural resources from fire, insects and disease.
 - (6) Protection of plants and animals and the habitat they depend upon, especially endangered and/or threatened species.

¹ Facilities Engineering, Natural Resources -- Land, Forest and Wildlife Management, AR 420-74 (Department of the Army [DA], July 1977).
² Disposal of Real Estate, AR 405-90 (DA, 1974).

(7) Responding to the increasing need for food, fiber and timber products and outdoor recreational opportunities by managing lands capable of producing these resources as is consistent with the assigned military mission.

(8) Conducting training and field exercises in a manner which will least endanger the environment while still accomplishing training objectives.

(9) Protection of environmentally sensitive areas, such as: flood plains, wetlands, steep slopes, aquifer recharge zones and natural areas.

The following objectives of forest management, stated in AR 420-74, are based on the above general natural resource objectives:

Effective forest management provides for the sustained production of timber and related natural resource values such as natural beauty, recreation, wildlife, watershed protection, and the yield of high quality water. The optimum yield of each of these forest values on the same area is possible, provided appropriate compromises are made in the various parts of the Natural Resources Management Plan. Forest Management activities will, when pertinent, include:

(a) Cultural treatment designed to improve timber quality and quantity which are within the realm of economic feasibility.

(b) Use of harvesting or treatment specifications designed to attain multiple use and sustained yield and to improve troop training areas, watersheds, wildlife habitat and to complement natural beauty values along scenic corridors.

Thus, although forest management is itself important, it is actually part of the installation's larger natural resources program. The development of such a program requires a coordinated effort among the installation forester, wildlife specialist, land manager, and the operations-training section (G3). Each installation should prepare a natural resources plan, although this has not yet occurred on all installations. Based on the guidance of the natural resources plan, a forest management plan is prepared, which should include a section on timber harvesting as it relates to management.

Organization

Timber management at every installation lies in a direct line of authority under the commanding officer (Figure 1). Major command foresters provide guidance in and review of timber management programs and operations. Since there are only three major command foresters, the

frequency and amount of individual attention given to any one installation is limited.

Since command foresters must review management plans for installations throughout the United States, they must also advise on forestry practices dealing with many forest types. A professional forester, however, usually serves only one region, developing a thorough expertise in the species characteristic of that region. It is unrealistic to expect an Army forester to provide optimum guidance when he* is responsible for the entire Continental United States. A better approach is that of the Navy, which divides the United States into regions; no one individual is responsible for reviewing management plans from all regions.

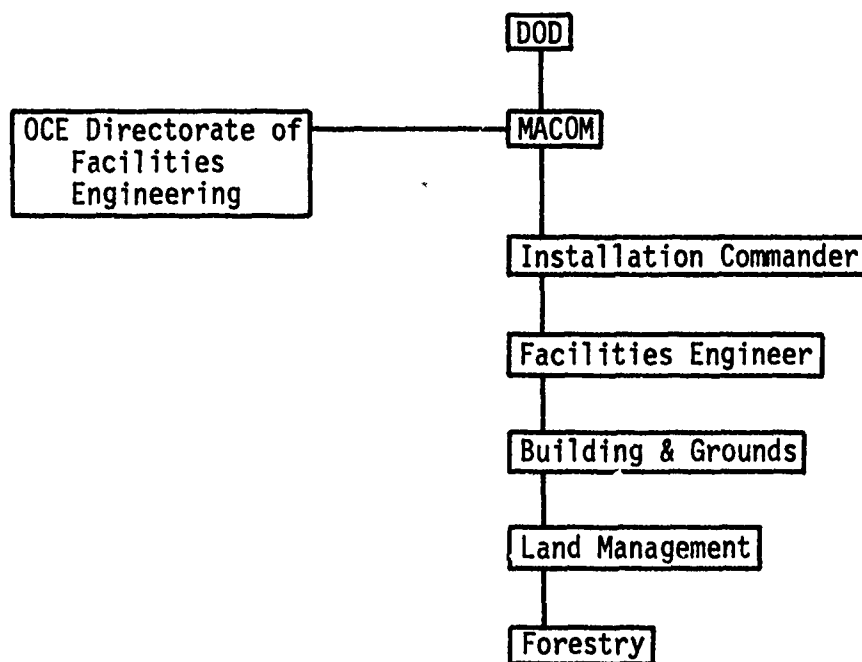


Figure 1. Line of authority for timber management.

*The male pronoun is used throughout this report to refer to both sexes.

Most Army policy for timber management is developed in response to Federal laws and directives. DOD provides directives and guidance to the military services for implementation. Before Army policy is issued, it is thoroughly coordinated with the major commands and selected installations. This provides for input by professional natural resources managers at all levels of the Army.

At the installation level, both the natural resources and forestry sections typically report to the chief of buildings and grounds, who in turn reports to the FE. The chief of buildings and grounds is usually not a professional wildlife specialist or forester.

Major Operations

Among the many operations (e.g., forest fire protection, road maintenance, and reforestation) performed by the installation forester, forest management and the marking of timber available for sale deserve the closest attention, since they impact on timber harvesting operations more than others.

Management

One concern of forest management that is given highest priority is the development of a forest management plan that accommodates the assigned mission of the installation. Since the requirements of the military mission may change substantially within a very short time, the plan must be flexible, yet maintain the integrity of the woodlands being managed. Forest management plans are simply a means of establishing procedures for conducting forestry operations in such a way as to achieve the natural resources objectives of the installation. Forest management plans require that a thorough inventory of the forests be conducted to identify the variety, quality, quantity, and location of existing forest cover. From this information, a management plan can be prepared which compartmentalizes the woodlands into units for administration and silvicultural operations. The timber harvesting plan is then derived from the management plan, since the management plan identifies which areas of the forest need cutting.

All plans must be tailored to meet the unique mission requirements of the installation.

The multiple use of Army forest land is perhaps the outstanding characteristic of current timber management practices. Multiple use means that the forest is called upon (1) to serve the training needs and, in general, the military mission of the Army, (2) to produce timber, (3) to facilitate conservation of wildlife, (4) to provide for outdoor recreation, and (5) to act as a watershed. To varying extents, these uses conflict. For example, clearing a well-stocked timber stand

on quality forest land to construct a firing range obviously interferes with continued production of timber on the site.

The allocation of the forest land to various uses currently seems to be governed largely by informal agreements or compromises reached by individuals in charge of the several programs that correspond to the uses. The allocation among uses is thus fairly fluid, varying as the Army's mission changes and as the individuals concerned leave and are replaced.

Some forest land is better suited for growing timber than is other land. In the language of forestry, variation in land quality is expressed in terms of site classes. Land of the best quality is classified as site class I; land of lower quality is classified in descending order as site classes II through V. In general, it probably does not matter appreciably what site class of forest land is used in facilitating the military mission or meeting the other demands placed on the forest at Army installations, except in the case of timber production. For the latter use, the site class of the forest land matters greatly. Thus, setting aside better quality forest land -- say, that in site classes I through III -- for timber production would be advantageous. Forest land of lower quality would then be available for other uses. Such an allocation does not mean that the better grades of land could not serve other needs as well. For example, forest land which is managed with the sole object of maintaining a training environment could also be used to grow marketable timber, to reserve some mature timber for specialized military and private needs, to provide a habitat for wildlife, and to serve as a watershed. However, where other uses conflict with timber production, it is clearly preferable from the standpoint of timber output to assign these uses to forest land of lower quality. For example, firing ranges should be assigned to site class V forest land where feasible.

Implementation of this type of program would require mapping the forest land at installations by site class and further dividing the site classes by soil type and land-use classifications. Such mapping would pose a difficult problem, since both soil maps and climatic maps which could be used to evaluate site classes are not widely available. After mapping is accomplished, however, it would be necessary to construct a set of guidelines to indicate the site class to which the various uses that conflict with timber production are to be assigned. The guidelines should take into account (1) the area of land in the different site classes, (2) the extent to which a given use depends on higher quality land, and (3) the priority of the military mission over other uses.

Such a program would offer a way to improve the efficiency of Army forest land use. The only costs involved would be those associated with the mapping -- an essential tool of forest management -- and the drawing up of guidelines. Additionally, the map and guidelines could easily

become management tools useful in establishing priorities for work and capital investment.

It might be worthwhile to consider expanding the program to include guidelines indicating the intensity with which timber management should be practiced on those sites set aside primarily for timber production. More intensive management would mean increasing such factors as the extent of site preparation to facilitate reproduction, the extent of natural or mechanical regeneration of desirable species, the level of protection from fire and disease, and the number of thinnings prior to harvest. To varying degrees, these activities are already undertaken at Army installations.

Marking Available Lumber

One of the more demanding duties of the installation forester is marking that timber which is available for sale. In addition to being an economic venture, selling timber is the forester's main mechanism for implementing the management plan. Timber selling (or harvesting) is conducted by the Corps of Engineers through its field representative assigned to the installation. Through sales, the installation forester improves the timber stand and achieves the installation use established in the management plan.

Timber sales should reflect the cutting cycles established in the management plan and should contribute to a sustained annual cutting rate. However, they do not always do so. Since training needs vary, cutting areas may change overnight, thereby decreasing the harvesting activity and causing the plan to be modified.

This aspect of timber management is of most interest to those Corps field representatives assigned to the larger installations, since a certain amount of timber must be available each year to support the Corps forestry staff and to maintain the forest industry interest in the timber. For this timber, the Corps representatives depend on the installation forester, who is not under the supervision of the Corps.

At small installations not served by a resident Corps forestry staff, site sales activities are often stalled while waiting for the appropriate Corps personnel. This is a source of frustration to many installation foresters who feel this constrains their timber operations. These installation foresters contend they are capable and willing to accomplish site sales activities but lack authority.

Once timber has been marked by installation personnel, the Army can insure efficient timber management and timber harvesting functions by having installation personnel and Corps field representatives strive to meet the following goals:

1. Reporting Availability of Timber - This installation responsibility should be accomplished 1 month after the marking of timber. If it is a large sale, reporting should be phased; e.g., if 6,000,000 board feet are to be sold, then 1,000,000 board feet should be reported every 2 months.

2. Advertisement, Award, and Notice to Proceed - This Corps responsibility* should be accomplished approximately 60 to 90 days after Report of Availability is received.

3. Contract Administration - This Corps responsibility should be accomplished 1 to 2 years after Notice to Proceed.

Costs and Revenues

Table 1 summarizes cash outlays and receipts of the Army forest management program for the past 10 fiscal years. In each of these years, receipts have easily exceeded outlays; total program costs have typically been about 60 percent of the dollar proceeds from sales.

Costs incurred by the Corps in contracting for and supervising timber harvests are also included in the total program cost figures. On the average, Corps costs constitute 12 percent of the value of timber sold.

Inflation is a primary cause of the upward trend in both costs and sales over the past 10 years. Net revenues, or sales less costs, thus are also affected by inflation. To remove this influence, the net revenue data were adjusted to constant 1972 dollars (see Table 1, Column 5). The figures show no clear trend with time. The annual average of this series for the 10-year period is \$3,394,000 expressed in 1972 terms.

The chief of the forestry section or the senior forester at the installation, subject to the approval of the forester assigned to the major command, determines total program costs for forest management at the installation as well as the distribution of these costs among (1) timber harvesting, (2) reforestation and timber-stand improvement, (3) construction and maintenance of access roads, and (4) fire protection.

Sales proceeds depend on the quantity of timber harvested and stumpage prices, which are largely determined through market forces. Thus, prices received at installations vary according to the number of processors or manufacturers of forest products in the vicinity; that is, prices tend to be higher where competition among potential buyers is greater. On the other hand, stumpage prices received by the Army are lower than prices received by private owners because of the extra costs

*On small installations, this should become an installation responsibility.

of harvesting timber at an Army installation -- costs resulting from such factors as increased paper work, restrictive regulations, and in some cases being forced to move harvesting operations to another part of the forest to avoid conflicts with military training activities. Furthermore, Army timber is sometimes considered of lower quality because of metal contamination from artillery and other weapons.

Comparing the data in Table 1 with those of other Government agencies is interesting. In the case of the U.S. Forest Service, the cash costs of managing the national forest (including constructing needed roads) have exceeded cash receipts from all sources except during a few years in the 1950s.³ Other agencies have done better in this respect than the Forest Service. The State of Washington, for example, realizes a substantial net revenue from operations of its forest lands. The Bureau of Land Management operates forest lands at a much lower ratio of cash costs to cash income than does the U.S. Forest Service.⁴ In comparison to these agencies, the Army program does not seem to be mismanaged. Furthermore, the fact that many of the benefits which flow to the Army from use of forest land are internal to the Army strengthens the cost/benefit profile for the Army program.

³ M. Clawson, Forests for Whom and for What (Johns Hopkins University Press, 1975), p 103.

⁴ M. Clawson.

Table 1
Cash Costs and Revenues of the Army Forestry
Management Program, FY67 Through FY76

	Col 1*	Col 2*	Col 3*	Col 4	Col 5**
	Total Program Costs (000)	Dollar Proceeds Sales (000)	New Cash Revenues (2 - 1) (000)	Costs as a Percent of Sales [(1+2)X100]	Revenues Adjusted to 1972 \$ (\$1,000's)
FY67	2889	4324	1435	67	1816
FY68	2816	4340	1534	65	1847
FY69	2810	4213	1403	67	1612
FY70	3120	3936	816	79	896
FY71	2832	4113	1281	69	1334
FY72	3375	3957	582	85	582
FY73	3315	5344	2029	62	1914
FY74	3928	6957	3029	56	2611
FY75	4407	6454	2047	68	1624
FY76	4457	9219	4762	48	3553

*From RCS ENG-162, Receipts and Expenses Woodland Management Program.

**Net revenues were adjusted using the GNP price deflator from
Table B-31 of the Economic Report of the President (1976).
The rate of increase in the price deflator for 1976 was assumed to be
6 percent.

3 ANALYSIS OF CORPS OF ENGINEERS TIMBER HARVESTING OPERATIONS

Background

Objectives

Accomplishing timber harvesting in an effective and timely manner requires that the following objectives be met:

1. Orderly and efficient harvesting of any timber made available under approved forest management plans. This objective can be accomplished through well-planned and effectively administered timber sales.
2. Accomplishment of required harvesting with as little ecological disturbance as possible. Priorities are to be established by considering first the primary mission of the installation and then the ecological interdependence of all natural resources. Priority is also to be given to the protection and preservation of habitat used by rare and endangered species and of special interest areas.
3. Promotion of greater cooperation among the various Government agencies concerned with land management.
4. Preventing the waste of natural resources.

Mission

The Corps of Engineers acts as the disposal agent for the using installation. As agent, the Corps, acting through the District Engineer's Real Estate Division, has a fiduciary relationship to the installation command in effecting disposal actions resulting from implementing the approved forest management plan. In addition to conducting the actual disposal, those involved in timber harvesting activities should take positive action to fully inform the Installation Commander of the economic ramifications and the effects on public and industrial relations of land management and land-use alternatives; this information enhances the decision-making process. Timber harvest representatives should not make timber management decisions, but should attempt to assist the installation by assuring the availability of full and accurate information regarding marketing alternatives.

Those responsible for the timber harvesting program should attempt to maintain the organizational flexibility which is essential to rapidly adjusting practices as required to match changes in military and other use requirements. The land-use and forest configuration requirements of military training activities should be observed and analyzed to assure an understanding of their effect on possible disposal activities. Markets, marketing methods, and advances in resource utilization technology

should be reviewed to assure that information on all land-use potentials is made available, allowing enhancement of existing land-use opportunities of the military units. Practices should be modified and adapted to enable existing higher priority concurrent land uses to match proposed practices. This meshing of uses and practices must be explained in terms of the effect on higher priority uses.

Organization

Timber harvesting authority passes down from OCE to the field in a direct line, as illustrated in Figure 2.

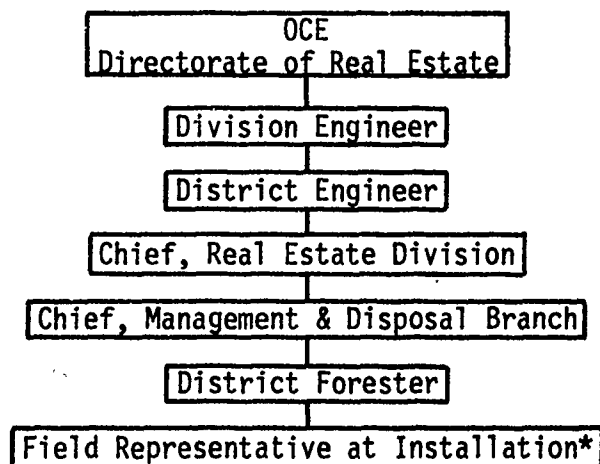


Figure 2. Lines of authority for timber harvesting.

Policy and guidance regarding timber harvesting operations are established by the Directorate of Real Estate at OCE. Policy information is passed through the Division to the District, which is the first real working level. The District forester is responsible for assisting each Corps field representative with any problems. The head Corps field representative at seven major installations is a fully qualified forester who supervises other foresters and forest technicians in carrying out the required timber sales. This type of arrangement is the exception Army-wide.

*Only 10 Army installations have a Corps forestry person assigned on a full-time basis. Many installations never see Corps personnel from one year to the next.

Operations

General

Upon receipt of a report of timber availability from the installation forester, qualified District or field representatives inspect the sale area(s) to ascertain that all conditions noted in the availability report are correct. During this inspection, data are collected for an appraisal report and disposal plan. Field data include information on ground conditions, average volume per acre to be harvested, general access to the sale area, quality of the timber, and distance from the sale area to local timber markets. Most of this information is supplied by the installation forester. Maps of the sale area, a harvesting plan, and drafts of the Invitation to Bid are finalized and issued to all prospective timber buyers within the local market area. During the advertisement period, prospective bidders are shown the sale timber. After the opening of bids, the awarding of a contract, and issuance of the notice to proceed, field personnel coordinate their field inspection activities with the contractor's field representative(s).

Upon completion of the applicable conditions and terms in the sale agreement, District office field personnel and installation forestry personnel make either joint or separate inspections of the sale area(s) to insure faithful performance of the contract. On the smaller installations, this is accomplished by the installation forester. Findings are documented in a clearance report, which is forwarded to the District office. Upon notification that the contract has been satisfactorily completed, the purchaser is given clearance, the contract is closed, and all advance payments in excess of those due for the timber harvested are refunded along with the cash performance deposit. When a surety bond has been issued, the insurance company is notified that the purchaser has fulfilled its contractual obligations to the satisfaction of the Government with the recommendation that the performance bond furnished by the purchaser be released.

Important Activities

Coordination of Harvesting and Management Activities. Coordinating the timber harvesting operations with other installation or project activities is of the utmost importance, not only to insure orderly and efficient implementation of the approved forest management plan, but also to prevent interference with military missions.

The authorized Corps representative should initially become familiar with all requirements of the approved forest management plan, particularly as it pertains to cutting cycles, projected schedules for cutting of logging areas, delineation of zones or units, species and volumes of timber, locations of firing ranges and training areas, and logging conditions. Periodic reviews should be made with the installation forester to insure that proper actions are being taken

(particularly by the Corps of Engineers) to meet requirements and projected schedules of the plan. Although it is not normally done, the District Management and Disposal Branch should have a copy of the forest management plan for each installation in its jurisdiction so that these plans can be reviewed if needed. Familiarity with the plans permits the District staff to encourage installation personnel to meet the goals of the plan if District personnel find during visits that those goals are not being met.

Orientation and Subsequent Briefing of Directorate of Facilities Engineering, Provost Marshal, and Resources Managers With Full-Time Corps Forestry Personnel. A Corps representative assigned full time to a military installation should periodically review his objectives with the military authorities to insure that they clearly understand the assigned functions of the Corps of Engineers, one objective of which is to work closely with such authorities. These reviews can be accomplished by conferences at the time new FEs and provost marshals report for duty and subsequently through meetings (at least quarterly) to inform the FE of progress on availabilities, to discuss field operations, and to inquire about any particular problems experienced by the installation. In addition to objectives, the FE and provost marshal should initially be informed of:

1. Responsibilities of the authorized Corps representative
2. Contracts in effect
3. Method of administration, inspection techniques, scaling, or weighing
4. Security programs
5. Other points of mutual importance.

The Corps' color slide documentary on timber-disposal procedures is a good medium for orientation of FEs and others concerned with resource management and security. This documentary should be shown when appropriate. Periodic field trips are another means by which FEs can be educated on timber harvesting. All conferences and field reviews must be closely coordinated with the post forester.

Review of Activities With Post Forester. The approved forest management plan and any subsequent reports of the availability of timber for harvesting should be reviewed in detail with the installation forester in the field, giving attention to special conditions or requirements for harvesting. After operations commence, frequent meetings should be held with the installation forester to keep him posted on the progress of the cutting and also to accomplish periodic inspections of the field operations. Mutual problems should be discussed and every effort made to maintain good relations with installation personnel so as

to obtain cooperation in accomplishing responsibilities. However, the authorized Corps representative should make it clear that all contract administration will be accomplished by the Corps representative and that installation personnel will not deal directly with a contractor. This restriction is a source of trouble on many installations because, in the absence of a Corps representative, no one can tell the contractor anything binding or even point out a contract violation.

Clearance With Range Firing and Other Military Training Schedules.

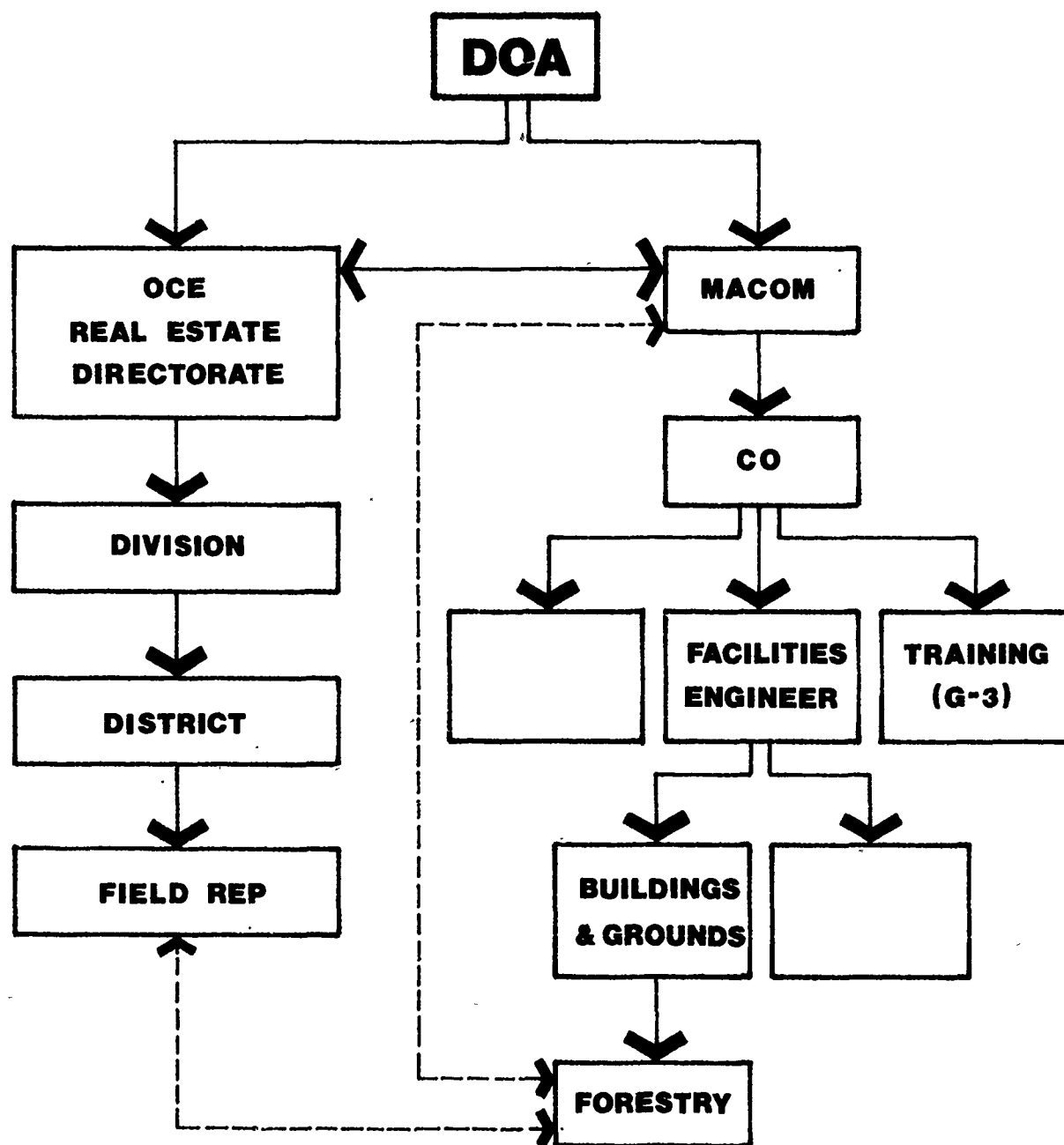
Close coordination with Range Control Headquarters concerning range firing and other military training schedules is important to insure safety, to prevent interference with military functions, and to eliminate extra work and cost on the timber purchaser's part. Requiring the purchaser to move equipment in and out of an operational area is costly and results in low productivity and poor utilization of manpower. A lack of advance planning and of proper notification to the purchaser can create ill will, possibly reducing his interest in future timber offerings. A clear and simple system of coordinating with the Training (G3) Section or range-control officers must be established, followed up by verifying the use of ranges or training areas. This verification can be accomplished by securing weekly or periodic firing or training schedules from the G3 Section or the range-control officer, either directly or through the installation engineer or forester, and then following up the day before by telephone. Clearances on a daily basis can be obtained by requesting individual ranges or training areas by name as assigned by G3. It is the authorized representative's responsibility to maintain close coordination.

Problems and Trends

The major problems hampering timber harvesting, as identified through the interviews and at the timber harvesting workshop, were organization and market consideration. Less significant problems identified were fuelwood sales and timber salvage. (Question 13, Appendix C.)

Organization

The most rapidly identified aspect of the organizational problem is the scheduling of forest management operations on a long-term basis through coordination of activities (on installation responsibility) with timber harvesting activities (a Corps of Engineers responsibility) (Figure 3). Without the ability to coordinate actions between the providers and sellers of timber, it is virtually impossible to insure that the necessary quantities and quality of timber are available for cutting to meet the requirements identified in the management plan. The availability of timber impacts the bidding and the price received for timber. The District office is often not promptly informed of timber availabilities, thus preventing effective use of District personnel and uniform sales on a regular basis, which would promote optimum competition.



CE

(TIMBER HARVESTING)

ARMY

(FOREST MANAGEMENT)

Figure 3. Organizational relationship between timber management and timber harvesting operations.

To effectively manage personnel, the District forester must know how much timber is to be cut and where it is to be cut approximately 1 year in advance. With such lead time, he can make pertinent personnel assignments. Without such information he may overstaff one installation or understaff another. If timber harvesting and forest management were both under one jurisdiction, this problem would not arise.

Market Consideration

In some cases, wood for which there is no market must be sold. This causes problems for both the installation forester who wants to get rid of the wood and the Corps personnel whose task is to sell it. Successful sales may sometimes require selling the unmerchantable timber in small blocks as part of other sales. This is best accomplished by the installation forester and the Corps representative working jointly in determining sale packages, and marking timber accordingly.

On a few installations, timber sales are geared to income rather than to sound forest management; such an approach can cause overcutting and understocked conditions, with the result that the Government and the public do not realize the maximum benefit from the harvesting of timber. Practicing sound and efficient forest management will insure a reasonable return on the Government's investment in manpower and material. To meet this objective, communication and coordination within the existing structure must be improved.

Fuelwood Sales

Fuelwood or firewood sales are conducted on some installations. They are small sales of low-quality timber with very little merchantability, sold by installation personnel or Corps representatives to private individuals in the surrounding communities. Prices usually range between \$1 and \$5 per rick. Fuelwood sales permit the sale of slash and low-quality timber unwanted by commercial loggers, and they promote cleanup of logging operations. They thus provide a service to the installation. Administration of a fuelwood program is not time-consuming, as it requires little personnel activity and recordkeeping. The only potential difficulty with such sales is that of insuring that purchasers are informed when training demands preclude their removal operations. More use of this service to installations should be encouraged.

Timber Salvage

Timber salvage sales on Army installations, conducted as a result of a disaster or insect infestation, can be significant in terms of dollar value. For instance, damage caused by Hurricane Eloise, which struck Fort Rucker on 23 September 1975, and damage caused by an almost simultaneous attack of Southern Pine Beetle produced total timber salvage revenues of \$2,059,347.

Timber salvage of this extent requires that the District and the installations it services have natural disaster plans which they can implement speedily if necessary. Such a plan should (1) establish a manpower utilization strategy, (2) itemize communications requirements between the District and the installation, and (3) establish damage assessment procedures, a market analysis procedure, and cleanup activities.

Costs and Revenues

The costs of the Corps timber harvesting program can best be explained by examining the District's cost/income ratio. Table 2 presents an analysis of military timber harvesting cost, income, and labor requirements by District for a 3-year period (FY74 through FY76). This information was gathered from the questionnaire distributed prior to the timber harvesting workshop in Atlanta, GA (see Appendix C).

Data presented in the table indicate the following:

1. The average personnel cost per position was \$20,844 per fiscal year
2. An average of 5.78 contracts was administered per position per fiscal year
3. The average timber income per position per fiscal year was \$163,653.

The cost/income ratio developed in this table can be used as a management tool in analyzing cost and allocation of spaces. For example, if the OCE cost/income ratio management objective is 15 percent per annum for all Districts and there was a total income of \$7,000,000, the total budget (cost) and man-years can be calculated:

$$\$7,000,000 \times 15\% = \$1,050,000$$

$$\text{Budget cost/fiscal year} = \$1,050,000$$

$$\text{Man-years} = \frac{\$1,050,000}{21,000^*} = 50$$

The analysis contained in Table 2 is based on contract value rather than a standard unit of measure for timber. Although contract values give very good data on cost/income ratios, they give no indication of the

*Based on average cost per personnel space as determined by the analysis for the 3-year base period (FY74 through FY76).

Table 2

Analysis of Military Timber-harvesting Cost, Income, and Labor
Requirements by District for Base Period FY74 through FY76

District	Ave. Income Per Annum	Ave. Cost Per Annum	Cost/Income Ratio (%)	Ave. Man-Yrs Per Annum	Ave. No. Contracts	Ave. Value Ex. Contract	Ave. Cost Per Contract	No. Installa- tions Serviced	Total For- est Acreage	Ave. Size Instal- lation (Acres)
Baltimore	\$ 181,652	\$ 69,000	37.9	2.46	10.6	\$17,029	\$6,473	7	106,089	15,155
Ft. Worth	571,191	84,915	14.9	1.82	17.3	33,016	4,908	6	112,381†	28,057
Kansas City	11,533	1,600	13.9	0.10	1.3	8,871	1,230	4	44,414	11,103
Little Rock	135,167	14,806	10.9	0.60	2.0	67,383	7,403	2	12,350	6,175
Mobile	718,116*	72,491	10.1	4.00	24.6	29,113	2,947	11	188,041	17,094
Norfolk	579,100	132,666	22.9	7.56	16.3	36,193	8,139	5	91,554	18,310
Omaha	109,993	5,800	5.3	0.20	15.6	7,023	370	9	86,256	9,584
Savannah	2,904,700	390,770	13.4	20.00	133.3	21,790	2,931	8	608,148	76,018
Seattle	1,783,086	118,833	6.6	6.00	26.0	68,580	4,570	2	54,457	28,484
Total (Overall)	6,994,538	890,881	12.7	42.74	247.12	28,304	3,605	54	1,303,684	24,142

* Fort Rucker income and volume figures for FY76 were adjusted to reflect normal/average harvesting conditions because Fort Rucker sustained heavy timber damage from Hurricane Eloise on 23 September 1975, which resulted in an unusually large salvage program during the remainder of FY76. Timber damages were sustained over the entire post. Mobile District salvaged (harvested) 24,408 million board feet (MBF) (57 603 m³) of pine saw-timber, and 32,210 cords (115 956 m³) of pine pulpwood to achieve a total income of \$2,059,000 by close of FY76.

† Average figures do not include Fort Hood or Camp Bullis.

quantity of timber products sold. This quantity is another important factor to be evaluated when judging the District's timber harvesting programs. Since the main purpose of timber harvesting on military installations is to accommodate the military mission, the service of removing timber products to create the required training conditions is as important as the monetary value received per contract.

The CUNIT,* a standard unit of measure for timber, establishes a common base for comparison. Table 3 presents the CUNIT costs and income by District. This table indicates the actual volume sold per District and gives a more equitable standard of workload evaluation. A comparison of the Seattle and Mobile Districts based on the data in Table 2 shows that Seattle has better income gains. However, the timber products sold by the Seattle District are of better grade than those sold by the Mobile District; this difference is reflected in the income. These data might lead to the incorrect conclusions that the Mobile District is not performing adequately. However, a comparison of the CUNITs harvested by the Mobile and Seattle Districts, as recorded in Table 3, indicates that the Districts harvested similar quantities of timber. The Mobile District accomplished its harvests with two fewer personnel. Thus, based on quantity alone, one might erroneously conclude that the Seattle District is doing something wrong. This example clearly shows that performing an equitable evaluation of District harvesting programs requires that both income and quantity of timber harvested be considered.

The type of timber product harvested is one of the most important determinants of income received from sales. The type of timber grown is not determined by the Corps of Engineers; it is the installation forester's responsibility and is determined by history of the area, site conditions, and military priorities. Thus, if the Corps representative wants to increase the income received from a particular piece of forest land, he must guarantee that the optimum species is grown on the forest land. Increasing income from forestry operations must always be an ancillary goal to accommodating the military mission, and never exceed it in importance. The Corps representative must therefore work closely with the installation forester to insure that this factor is reflected in the management plan. Accomplishing such cooperation is sometimes difficult, since the installation forester may have a different silviculture philosophy from that of the Corps representative. Care must be taken to insure that a philosophy of timber sale for profit maximization does not become entrenched as the main reason of operation for Corps personnel. Also, safeguards must be established to insure that Corps personnel do not become insensitive to the needs of the MACOM and the installation.

*A CUNIT is 100 cu ft of solid wood, based on inside bark measurement.

Table 3

Average Annual (FY) Cost and Income Ratio With Total CUNITS
Harvested by District for FY74 Through FY76

District*	Average CUNITS per Annum	Average Cost per CUNIT Ratio	Average Income per CUNIT Ratio
Baltimore	11,271	\$ 6.12	\$ 16.12
Fort Worth	21,338	3.98	26.77
Kansas City	687	2.33	16.79
Little Rock	2,145	6.90	63.01
Mobile	45,716	1.59	15.71
Norfolk	30,682	4.32	18.87
Omaha	4,759	1.22	23.11
Savannah	188,921	2.07	15.37
Seattle	44,600	2.66	39.98
Total	350,119	\$890,881**	\$6,994,538+
Corps Avg.	N/A	\$ 2.54	\$ 19.97

*District listing does not include New York (an average of 811 CUNITS harvested annually) and Los Angeles (an average of 4,726 CUNITS harvested annually) because insufficient data were available.

**Average annual cost for the base period (FY74 through FY76).

+Average annual income for the base period (FY74 through FY76).

4 ANALYSIS OF OTHER AGENCIES' FORESTRY OPERATIONS

Agencies Analyzed

To permit comparison of the Army's forestry program with other programs, the Air Force, Navy, and Forest Service programs were analyzed.

Missions

The forestry missions of these other agencies are less demanding than those of the Army because they usually do not have to provide the variety of woodland training conditions that the Army requires.

In support of its military mission, the Air Force manages approximately 750,000 acres (303 500 ha) of forestland which is used for forestry, wildlife, and other compatible purposes. Most Air Force installations have fewer than 10,000 acres (4000 ha) of forestland, with training or mission efforts confined to concentrated areas, as opposed to the larger acreages required for the Army's mission.

To acquire the land base to support its assigned military mission, each Air Force base prepares a forest-resource management program. This plan is then the basis for all forestry operations conducted on the base and insures that the forest resources are compatible with the military mission(s).

In support of its military mission, the Navy administers a forest-resource management program on approximately 301,000 acres (122 000 ha) in the United States. As with the Air Force, a land base is acquired to support the assigned missions, restricting forestry practices to implementation of the forest-resource management program which is compatible with the military mission. The amount of forested land on Navy bases is generally much smaller than that on Army or Air Force installations.

The Forest Service is an agency of the Department of Agriculture responsible for the administration of a forest-resource management program for approximately 74 million acres (29 940 000 ha). This program includes all the activities related to the forest environment. In this organization, a land base is acquired for the primary purpose of conserving and managing natural forest resources for the public's present and future benefit. Forest-resource management is not conducted to support such intensive uses as assigned military missions. Forest Service timber sales generally establish national market trends and stumpage prices because of the significant volumes sold annually. As a general policy, the Forest Service separates the marketing function (contracting) from the forest management function.

Organization and Responsibilities

The important fact about the three other agencies' organizations is that authority for both harvesting and management activities is vested in one high-level agency.

In the Air Force, the Base Civil Engineer (BCE) manages and conducts the natural resources program, while the base procurement officer is responsible for executing and administering service, sale, and supply contracts in support of the local forest management program. The BCE provides timber appraisals to the base procurement officer, along with a complete description of property to be sold, volume byproducts, location of sale areas, maps, and technical provisions. He also acts as representative of the contracting officer, where designated, to perform inspections and technical surveillance over the contractors in accordance with contractual provisions. Thus, the base procurement officer primarily handles paper work and leaves the field duties to the BCE. Figure 4 illustrates this organizational framework.

In the Navy, the Navy Facilities Engineering Command Field Division, through its Real Estate Division and Natural Resource Branch, conducts the following operations:

1. Provides and executes contracts and documents in connection with forest management activities and timber sales
2. Provides technical forestry services to installations and facilities
3. Reviews forest-resource management plans and relates cost estimates
4. Prepares long-term forest management plans and harvesting contracts when requested

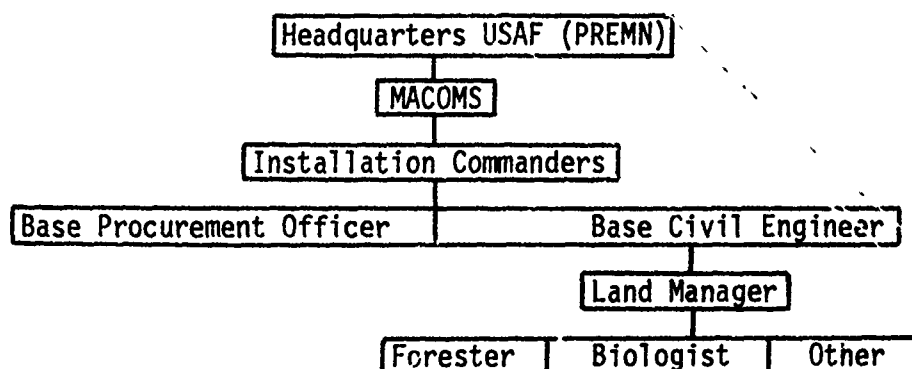


Figure 4. Air Force forest management organization.

5. Establishes, coordinates, and promulgates program guidelines for services required and issues appropriate instructions.

The commanders of installations implement forestry programs with technical advice and assistance, as required, from the Naval Facilities Engineering Command Field Division's Natural Resource Staff. Installation personnel inspect timber-sale-contract operations and areas for compliance with contractual requirements and prepare necessary inspection reports for the contracting officer in the Facilities Engineering Command Division Field Office. Figure 5 illustrates this relationship.

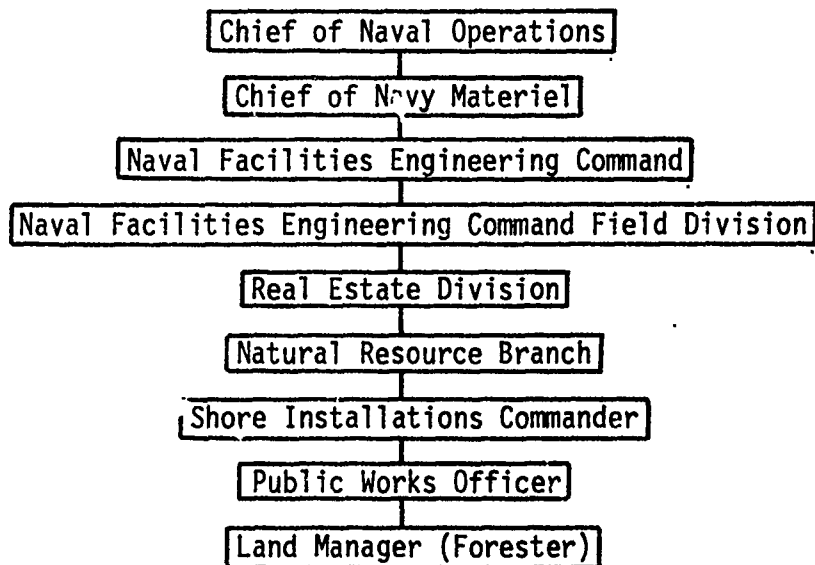


Figure 5. Navy forest management organization.

The Chief of the Forest Service provides guidance for implementation of policy and directives to the Regional and State Offices. These offices pass the information to District rangers, who are responsible for implementing the forest-resource management program. The District ranger also prepares timber sales and conducts field contract inspection for compliance. The state supervisor's office issues invitations to bids, appraises timber, and executes contracts for sale with volumes up to 15,000 million board feet (MBF) (34 800 m³). The state and regional offices audit National Forest District timber sales annually. Figure 6 displays the organization of the Forest Service.

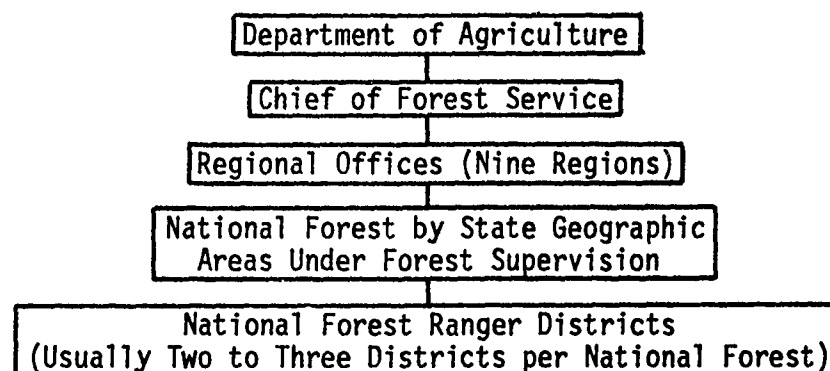


Figure 6. Forest Service organization.

Receipts and Expenditures

Table 4 compares the Army, Navy, and Air Force receipt-expenditure figures for the 6-year fiscal period of FY71 to FY76. This table shows that the Army has never operated at a loss as the other two forestry programs have. However, the Army program never achieved the high gross net income per acre average that the Navy did during FY74 and FY75. In some years it is inevitable that the Army forestry income on a per acre figure will be below that of other service agency programs. This is mostly because of the intensive use the Army makes of its forested land for training ground forces, an activity not performed by the Navy. Heavy training usage on an installation greatly increases the complexity of the forest management program, particularly in forest fire control and timber sales. Intensively used Army installations also mean an increased need for forest access roads and firebreaks and greater maintenance requirements.

Comparison of the Army With Other Agencies

Army vs Air Force

Organization and Responsibilities. The Air Force and Army organizational structures are very similar. Technical assistance and guidance are provided by the command level; multiple-use natural resource programs are implemented by the Base/Installation Commanders. The Air Force BCE (equivalent to the Army's FE) manages and conducts the natural resource program. The headquarters Environmental Policy and Assessment Branch, Natural Resource Section (USAF/PREVPN) is equivalent to OCE's Buildings and Grounds Branch in the Directorate of Military Programs. The Air Force's Natural Resource Section provides leadership and technical assistance for the Air Force resource-management programs.

Table 4

Comparison of Army, Navy, and Air Force Receipt-Expense - FY71 Through FY76

FY	Receipt	Expense	Acres Managed Forest	R-E* Difference	Gross Net Income Per Acre (ha)
<u>Navy</u>					
71	568,718	648,349	312,559	-79,631	-.25 ()
72	633,139	730,981	310,694	-97,842	-.31 ()
73	621,350	623,537	295,945	2,187	-.00 ()
74	1,807,682	747,677	294,512	1,160,005	3.93 ()
75	1,960,641	895,873	294,000	1,064,828	3.62 ()
76	5,671,530	3,646,357	1,507,200	2,045,173	1.35 ()
<u>Air Force</u>					
71	642,000	506,000	695,000	-136,000	.19 ()
72	423,000	533,000	695,000	-110,000	-.12 ()
73	520,000	744,000	695,000	-224,000	-.32 ()
74	1,014,000	821,000	695,000	193,000	.27 ()
75	1,012,000	778,000	750,000	234,000	.31 ()
76	3,611,000	3,382,000	3,530,000	229,000	.06 ()
<u>Army</u>					
71	4,679,379	2,832,101	1,506,562	1,847,278	1.22 ()
72	4,235,655	3,375,410	1,518,245	860,245	.56 ()
73	5,230,055	3,398,074	1,514,496	1,831,981	1.20 ()
74	7,693,493	3,927,833	1,505,738	3,785,660	2.50 ()
75	6,385,830	4,406,861	1,513,274	6,988,959	1.30 ()
76	28,224,412	12,940,277	7,558,607	10,284,133	1.36 ()

*Receipts minus expenses

The differences are that the Air Force resource-management plans are approved at the headquarters level (USAF/PREVPN), while the Army's resource-management plans are approved at the appropriate command level (i.e., TRADOC, FORSCOM, or DARCOM). In the Army, timber sale administration is accomplished by the Real Estate Division of the Corps District and Division, whereas the Air Force uses the installation/base procurement offices and the BCE's staff. In the Air Force, a functional element of the departmental organizational structure (Headquarters, USAF/PREVPN, Natural Resource Section) is responsible for the natural resources management programs, whereas in the Army, responsibility is vested in elements of a separate agency of the Department of the Army (OCE).

Forest Resource Management. On large Air Force bases (more than 10,000 acres [4000 ha]), resource management is conducted by the BCE's professional resources staff, while on small bases (less than 10,000 acres [4000 ha]), the BCE is provided with close technical support from the major command's technical staff. The Army's natural resource management program is accomplished by the FE's technical staff. The Air Force uses treatment prescriptions for record management units to report specific treatments for specific areas and as a basis for work scheduling, budget submission, recordkeeping, program evolution, and inventory data updating. With this system, the total forest area is broken down into record management units to provide areas of convenience and similar sizes; this division permits concentration of management efforts on a timely basis and provides the flexibility needed to meet changing priorities. Normally, one-tenth of record management units are worked annually, whereas the Army concentrates its management effort in one compartment (which generally covers one-tenth of the total forest area) per annum. The compartment system does not give management personnel the flexibility required when priorities are changed because of the needs of the military mission or the effects of natural forces (such as diseases, insects, or hurricanes).

Timber Sale Administration. The base procurement officer is responsible for the preparation, advertisement, and award of the sales package and for administration of the sales contract. The BCE and his technical staff support the base procurement officer by providing comprehensive volume data, appraisals, and technical inspections to insure compliance with terms and conditions of the sale agreement. The Air Force's average cost/income ratio for performing this function was approximately 2 percent for 1975 to 1977. The Army's cost/income ratio was 12 percent for FY74 through FY76.

Army vs Navy

Organization and Responsibilities. The Department of the Navy uses its Facilities Engineering Command (under the direction of the Chief of Naval Materiel and Chief, Naval Operations) for developing guidance and providing technical assistance to the natural resource management

programs. Each Naval Facilities Engineering Command (NAVFAC) Field Division's Real Estate Division, Natural Resource Branch, provides technical assistance and guidance to the base installation commanders within its area of responsibility. The Army provides similar technical assistance and guidance to installation commanders and their facilities engineering staffs through the major command facilities engineering staff. Real estate work, including timber disposal, is handled by the Natural Resources Branch, whereas all of the Army's real estate activities are handled by the Division/District Real Estate Division.

Forest Resource Management. In the Navy, management is accomplished by a natural resource specialist working under the base public works officer, coordinated with the Natural Resources Branch of the NAVFAC Field Division's Real Estate Division. On naval bases too small to justify employing a natural resources specialist, the Natural Resources Branch provides all necessary technical support through in-house personnel or by contracting for necessary technical services. Thus, in the Navy, a middle level of expertise exists between the installation and the major command levels. This arrangement permits more efficient use of qualified forestry personnel, since permanent assignment at an installation is unnecessary, much like the case of small Army missions.

Timber Sale Administration. Large Naval bases are usually staffed with a natural resource specialist forester who is responsible for designating sale timber, estimating sale volumes, and performing sale area inspections. The NAVFAC Field Division's Real Estate Division, Natural Resources Branch, processes sale package preparation, advertisement, and awarding of contract information. It also acts as the fiscal agent for monies collected. Cost data for comparing the cost/income ratio of the Navy's timber sale administration with the Army's were not available.

Army vs National Forest Service

Organization and Responsibilities. The Forest Service uses a line-type organizational structure to implement its natural resource programs, whereas the Army uses a combination line and supportive staff organizational structure. Installation commanders have the dual responsibility of the assigned military mission(s) and the natural resource management programs.

Forest Resource Management. The District rangers manage the national forests with guidance and supervision from the appropriate state supervisor's office. Forestry program costs are unavailable for comparison with Army costs. The Forest Service cost accounting system is complicated by the fact that timber-stand improvement and road construction and maintenance are accomplished through the timber sales agreement -- the purchaser provides services in lieu of cash payment. The cost of these services is deducted from the total purchase price.

Timber Sale Administration. The District ranger designates and estimates the volume of sale timber, provides updates of appraisal information to the state supervisor's office, performs sale area inspections, and supervises timber harvesting operations. The state supervisor is responsible for the preparation, advertisement, and award of sale packages, acts as the fiscal agent for monies collected, and serves as contracting officer for sales of up to 15,000 MBF (34 800 m³). Contracting of repetitive functions on jobs (such as planting and site preparation) has proven very satisfactory, as it has in the Army's reforestation activities.

The environmental issue of clearcutting on national forest land has plagued the Forest Service for the past several years. Harvesting operations were restricted in South Carolina, North Carolina, West Virginia, and Virginia because of a decision by the Fourth Circuit Court of Appeals on clearcutting practices used in the Monongahela National Forest. The issue was recently resolved by passage of the National Management Act of 1976, which limited the use of clearcutting. This trend will likely continue, with increasing pressure from the environmental groups against any use of Government land for commercial forest-resource operations. Both the military services and the Forest Service have attempted to respond to such concerns by emphasizing protection of endangered species, including both animal and plant life. Management procedures over the past few years have been modified to protect endangered species' habitats, even though these modifications have caused delays in timber sales and more restrictions on harvesting operations.

5 CONCLUSIONS

This chapter summarizes the findings of this study of the Army's forest management program and the Corps of Engineers' timber harvesting program.

Installation Management Operations

Forest management is part of an installation's natural resources program. Some installations have not coordinated their forest management plan with their natural resources program.

Corps of Engineers Timber Harvesting Operations

1. Corps forestry personnel are assigned full time to only 10 major installations. The other 65 installations (mostly those under 10,000 acres [4000 ha] of managed forest) receive sporadic assistance from the various CE Districts, and some installations have no contact whatsoever with Corps personnel.
2. Problems occur on smaller installations where no fulltime Corps forestry personnel are assigned, because no other Army personnel have authority over logging contractors, even in pointing out contract violations.
3. On larger installations, some instances of the installation forester not informing Corps personnel of timber availabilities on a timely basis have prevented optimum use of District personnel and uniform sales.
4. Some installations permit sale of slash and low-quality timber unwanted by commercial loggers. Administering such sales requires little Corps or installation personnel effort and is beneficial to the installation.

Comparison of Army Forestry Operations With Other Agencies' Forestry Operations

1. Because of its mission, the Army's land-use requirements are more intensive than those of any other forestry organization.
2. The Army's forestry operation is the only major forestry operation in the United States that separates timber harvesting and timber management responsibilities; other organizations vest authority for both activities in a one high-level agency.

3. The Army's total annual forest management program costs have been about 50 percent of the dollar proceeds from sales, which is comparable to other public forestry agencies.

6 RECOMMENDATIONS

The following actions and procedures for the forest management and timber harvesting programs are recommended on the basis of the conclusions presented in Chapter 5.

Installation Management Operations

1. Additional emphasis should be placed on land-use studies. They should be broken down into priority categories for management purposes. The military mission, with its demands on the land base, should be analyzed in terms of land-use classifications. The forest management plan should then be correlated with the land-use classifications for maximum benefit to the installation.

2. Plans for the management of forest resources should include a section on timber harvesting as it relates to accomplishing the management objectives.

3. Coordination between forest management and harvesting personnel concerning disposal of timber can be improved by the installation or field-level command increasing its consultation with District personnel. Districts having a good understanding of the management objectives can assist the installation by recommending various types of harvesting operations that are compatible with installation objectives.

Corps of Engineers Timber Harvesting Operations

1. Districts having a resident staff at the installation served should administer all timber sales, including sales ranging from minor fuelwood to substantial volumes. This is not now uniformly permitted throughout the Corps.

2. The uniform contract/invitation form presented in Appendix A should be adopted.

3. A timber harvesting pamphlet should be made available to all Districts having a timber disposal mission. Guidelines are presented in Appendix B.

4. The Corps should consider the delegation of authority for all onsite sales activities (inspection, weighing, appraisals, etc.) to the installation at those installations not served by a resident Corps staff and where considerable travel time and temporary-duty (TDY) expense is incurred.

Organizational Structure

1. Forest management and timber harvesting operations on Army installations should be combined under one agency. This combination would (a) eliminate the communications and coordination problems identified in Chapters 2 and 3 between the providers of timber (Army) and the sellers of timber (Corps of Engineers); and (b) provide more flexibility in personnel assignment; i.e., have timber managers perform harvesting activities when necessary, and have timber harvesters perform management activities when required. This is the common operating procedure in all other forestry organizations as reported in Chapter 4.

2. Various Army forestry organizational structures which combine harvesting and management functions should be examined in detail to determine the structure that is best suited to the needs of the major commands and the installations they support.

REFERENCES

Clawson, M., Forests for Whom and for What (Johns Hopkins University Press, 1975).

Disposal of Real Estate, AR 405-90 (Department of the Army, 1974).

Facilities Engineering, Natural Resources--Land, Forest and Wildlife Management, AR 420-74 (Department of the Army, 1977).

Installations--General Woodland Management, TM 5-631 (Department of the Army, 1963).

APPENDIX A:

SUGGESTED CONTRACT FORMAT

CONTENTS

	<u>Page</u>
I. COVER PAGE.....	44
II. BID AND AWARD PAGE.....	45
III. ITEM BID PAGE.....	46
IV. DESCRIPTION AND MAP OF SALE AREA.....	47
V. SALE OF GOVERNMENT FOREST PRODUCTS INSTRUCTIONS TO BIDDERS.....	48
1. Knowledge of Sale of Terms and Conditions	
2. Inspection	
3. Condition of Property	
4. Preparation and Submittal of Bids	
a. Bid Items	
b. Bid Form	
c. Execution of Bid	
d. Marking and Addressing of Bid Envelope	
e. Delivery of Bids	
5. Bid Deposit	
6. Opening of Bids	
7. Bid Price Determination	
8. Award of Contract	
VI. GENERAL SALE TERMS AND CONDITIONS.....	52
1. Definitions	
2. Deposits	
a. Annual Bid Bond	
b. Performance Deposit or Bond	
c. Payments	
3. Defaults	
4. Disputes	
5. Title Passage	
6. Military Mission Delays	
7. Extension of Time	
8. Metal Contamination	
9. Liability of Government	
10. Supervision	
11. Vehicle	

CONTENTS (Cont'd)

	<u>Page</u>
12. Protection	
a. Government Property	
b. Personnel	
c. Stream Courses	
d. Environmental Quality	
13. Security, Fire, Safety, and Other Regulations	
14. Fire Suppression	
15. Gratuities	
16. Nondiscrimination in Employment	
17. Liquidated Damages	
18. Contract Termination	
19. Records	
20. Invitation, Bid and Acceptance	
VII. SPECIAL SALE TERMS AND CONDITIONS.....	63
1. Commencement	
2. Schedule of Removal and Completion	
3. Periods of Operations	
4. Identification of Forest Product(s) Included in Sale	
5. Merchantability	
6. Logging Operations	
7. Stump Heights	
8. Lopping	
9. Sawmills	
10. Weight Factors (Unit Price Sale)	
11. Volume Determination	
a. Unit Price Sale	
b. Lump Sum Sale	
12. Binder Chains and Security Seals	
13. Tree Paint and Equipment	
14. Equipment	
15. Other	

I. COVER PAGE

SALE

**GOVERNMENT - OWNED
FOREST PRODUCTS
LOCATED ON**

PAGE NO. 1 OF _____ PAGES OF
INVITATION NO. _____
DATED _____

Sealed bids in _____
subject to the terms and conditions set forth herein,
for the purchase and removal of the Government-owned
property listed in this invitation, will be received until the
time, date, and at the place indicated below, and then publicly
opened.

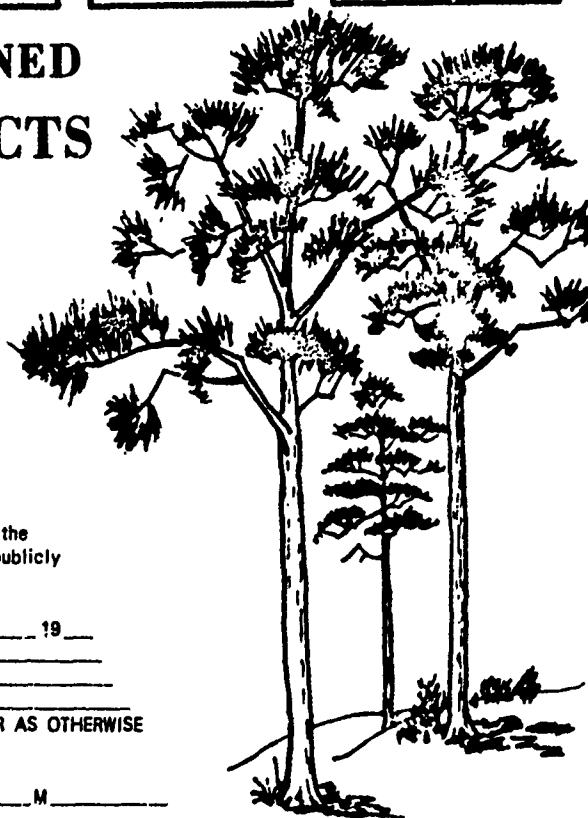
TIME OF OPENING _____ M, _____ 19____
DATE OF OPENING _____
PLACE OF OPENING _____

BID DEPOSIT OF _____ % OF TOTAL AMOUNT BID OR AS OTHERWISE
INDICATED IS REQUIRED.

INSPECTION INVITED BETWEEN _____ M AND _____ M

ARRANGE WITH _____ TEL. NO. _____

ISSUED BY _____
ADDRESS _____
PROPERTY LOCATED AT _____



II. BID AND AWARD PAGE

SALE OF GOVERNMENT FOREST PRODUCTS BID AND AWARD		INVITATION FOR BIDS NO.	PAGE
BID (This Section to be completed by the Bidder)		DATE OF BID _____ 19__	
<p>In compliance with the Invitation identified on the cover page hereof, and subject to all the sale terms and conditions contained in Instructions to Bidders, General Sale Terms and Conditions, and Special Sales Terms and Conditions, all of which are incorporated as a part of this Bid, the undersigned offers and agrees, if this Bid be accepted within 60 calendar days after date of Bid opening, to purchase and pay for any or all of the items listed for sale on Item Bid Page and to remove the property and perform the other required work as specified herein, after notice of acceptance by the Government. The total amount bid is \$ _____, Attached is the required Bid deposit in the form of _____, in the amount of _____.</p>			
<p>All bidders should complete the "Certificate As to Small Business Status" set forth below. This certificate must be completed and made a part of every Invitation to Bid on the sale of Government-owned timber with an estimated value of \$2,000 or more. Failure to properly execute this certificate will not invalidate a bid, but a proper statement must be signed before the bid is accepted by the Government. Refusal or delay in executing a proper statement is grounds for rejecting the bid. Intentional falsification of this certificate is a criminal offense punishable by a fine of not more than \$5,000 or by imprisonment for not more than two years, or both. (Title 18, United States Code, Section 645(a).)</p>			
<u>CERTIFICATE AS TO SMALL BUSINESS STATUS</u>			
<p>The bidder certifies that he (is) (is not) a small business concern within the terms of the following definition:</p> <p>In sales of Government-owned forest products a "small business" is a concern that: (1) is primarily engaged in the logging or forest products industry; (2) is independently owned and operated; (3) is not dominant in its field of operation; and (4) together with its affiliates does not employ more than 500 persons.</p>			
NAME AND ADDRESS OF BIDDER (Street, city, state, and zone) (Type or print)		SIGNATURE OF PERSON AUTHORIZED TO SIGN BID	
		SIGNER'S NAME AND TITLE (Type or print)	
<u>CORPORATE CERTIFICATE</u>			
<p>I, _____, certify that I am the _____ of the corporation named as Purchaser herein; that _____, who signed this contract on behalf of the Purchaser, was then _____ of said corporation; that said contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.</p> <p style="text-align: right;">Signature _____ (CORPORATE SEAL)</p>			
ACCEPTANCE BY THE GOVERNMENT (This Section for Government use only)		DATE OF ACCEPTANCE _____ 19__	
ACCEPTED AS TO ITEMS NUMBERED _____		UNITED STATES OF AMERICA	
		BY _____ (Contracting Officer)	
TOTAL AMOUNT \$ _____	CONTRACT NUMBER _____	TITLE OF CONTRACTING OFFICER _____	

III. ITEM BID PAGE

[illegible]

IV. DESCRIPTION AND MAP OF SALE AREA

SALE OF GOVERNMENT FOREST PRODUCTS DESCRIPTION AND MAP OF SALE AREA	INVITATION FOR BIDS NO.	PAGE
--	-------------------------	------

DESCRIPTION OF FOREST PRODUCTS SALE AREA(S):

MAP DESIGNATING SALE AREA(S):

SCALE: 1" = _____

V. SALE OF GOVERNMENT FOREST PRODUCTS
INSTRUCTIONS TO BIDDERS

1. KNOWLEDGE OF SALE TERMS AND CONDITIONS.

All bids submitted shall be deemed to have been made with full knowledge of all of the terms, conditions, and requirements herein contained. Any oral statement or representation by a representative of the Government, changing or supplementing any condition of this advertisement or contract resulting therefrom is unauthorized and shall confer no right upon the bidder or purchaser.

2. INSPECTION.

The bidders are invited, urged, and cautioned to inspect the property to be sold prior to submitting a bid. Property is available for inspection during the times and through arrangements made as specified on the cover sheet of this invitation. In no case will failure to inspect constitute grounds for the withdrawal of a bid after opening.

3. CONDITION OF PROPERTY.

The property is offered for sale "as is" and "where is" with the bidder being obligated and responsible to provide at his sole expense and without any cost whatsoever to the Government all labor, equipment, materials, and supplies required to harvest and remove the forest products involved. The description of the property is believed to be sufficiently specific for purposes of identification. Any error or omission in the description (including location) shall not constitute any ground or reason for nonperformance of the contract or claim by the successful bidder for any allowance, refund or deduction from the amounts offered. The Government does not make any guarantee or warranty expressed or implied with respect to the property as to quantity, quality, character or condition, size or kind, or that the property is in condition or fit to be used for the purpose for which intended. The purchaser acknowledges that he has satisfied himself as to the location, field conditions, and volume of forest products to be removed from the designated area(s). This contract shall be construed to have the intent of covering all the designated forest products of the specified species and sizes on the area and as described hereto and shall include all such forest products whether less than, equal to, or in excess of the estimated volume or quantity stated.

4. PREPARATION AND SUBMITTAL OF BIDS.

a. BID ITEMS. Unless the invitation otherwise provides, bids may be submitted on any or all items; however, a bid covering any listed item must be submitted on the basis of the unit specified for that item and must cover the total number of units designated for that item. In case of error in the extension of prices, unit process will govern.

b. BID FORM. Sealed bids must be executed and submitted on the bid form accompanying this invitation for bids, bid and acceptance, or on exact copies thereof. Bids shall be filled out in ink, indelible pencil, or typewriter, with all erasures, strike-overs, and corrections initialed in ink or indelible pencil. Additional copies of the bid form may be obtained from the said District Engineer.

c. EXECUTION OF BID. A bid executed by an attorney or agent on behalf of the bidder must be accompanied by an authenticated copy of his Power of Attorney or other evidence of his authority to act on behalf of the bidder. If the bidder is a corporation, the Certificate of Corporate Bidder must be executed. If the bid is signed by the secretary of the corporation, the Certificate must be executed by some other officer of the corporation under the corporate seal. In lieu of the Certificate of Corporate Bidder, there may be attached to the bid a copy of so much of the records of the corporation as will show the official character and authority of the officer signing, duly certified by the secretary or assistant secretary, under the corporate seal, to be a true copy.

d. MARKING AND ADDRESSING OF BID ENVELOPE. The invitation number and bid-opening time must be plainly marked on the left side of the sealed envelope in which bids are submitted, for example:

Return Address

Sealed Bid

To be opened: TO:

Time _____

Date _____

Invitation No. _____

e. DELIVERY OF BIDS. It will be the duty of each bidder to see that his bid is delivered by the time and at the place prescribed in the invitation. Bids received prior to the time of opening will be securely kept, unopened. The person whose duty it is to open them will decide when the specified time has arrived, and no bid or modifications of a bid, or withdrawals of a bid received thereafter, will be considered,

except those received before award is made, provided they are sent by registered mail or certified mail for which an official dated post office stamp (postmark) on the original Receipt for Certified Mail has been obtained and it is determined by the Contracting Officer that the late receipt was due solely to delay in the mails for which the bidder was not responsible or that the late receipt was due solely to mis-handling by the Government after receipt at the address of the place designated for opening of bids. No responsibility will be attached for the premature opening of a bid not properly addressed and identified. All modifications of a bid or withdrawals of a bid must be in writing. Telegraphic bids will not be considered, but modifications or withdrawals, by telegraph, of bids already submitted will be considered, if received prior to the time set for opening bids.

5. BID DEPOSIT.

A bid deposit in the amount of not less than 10 percent of the total bid price or the total amount of the bid if the estimated total bid price is less than \$1,000 must accompany each bid. Such deposit must be furnished in cash; or postal, express, or bank money order; cashier's, certified, or traveler's check; or a combination thereof made payable to the order of the "Treasurer of the United States." The deposit of the successful bidder will be retained by the Government and applied against the payment of the forest product sold. The sale will be on all-cash basis with other periodic payments required as hereinafter specified.

6. OPENING OF BIDS.

At the time fixed for the opening of bids, their contents will be made public by announcement for the information of bidders and others properly interested, who may be present, either in person or by representative; provided, however, that any information submitted in support thereof, the disclosure of which might tend to subject the person submitting it to a competitive business disadvantage, will upon request be held in strict confidence by the United States.

7. BID PRICE DETERMINATION.

a. When bids are solicited on a unit price basis, bidders will insert their unit prices and total prices in the space provided for each item. In the event the bidder inserts a total price on the item but fails to insert a unit price, the Government will determine the unit price by dividing the total price by the quantity of the item set out in the invitation. The unit price so determined shall be used for the purpose of bid evaluation, award and all phases of contract administration.

b. When bids are solicited on a lump sum or lot basis, bidders should submit a single total price on the Total Price Bid column of the bid sheet. Bidders should not make any entry in the Unit Price Bid column. In the event a bidder submits a total bid price and also a unit bid price which are not identical, the unit bid price will not be considered.

8. AWARD OF CONTRACT.

Award of contract will be made to that responsible bidder whose bid, conforming to the invitation for bids, is most advantageous to the Government, price and other factors considered. The Government may, when in its interest, reject any or all bids or waive any informality in bids received. The Government may accept any item or combination of items of a bid, unless precluded by the invitation for bids or the bidder includes in his bid a restrictive limitation.

VI. GENERAL SALE TERMS AND CONDITIONS

1. DEFINITIONS.

a. The term "Secretary" as used herein means the Secretary of the Army, and the term "his duly Authorized Representative" means the Chief of Engineers, Department of the Army, or an individual or board designated by him.

b. The term "Contracting Officer" as used herein means the person executing this contract on behalf of the Government and includes a duly appointed successor or Authorized Representative.

2. DEPOSITS.

a. ANNUAL BID BOND. In lieu of the required monetary bid deposit, an annual bid bond with surety approved by and in a form acceptable to the Government may be used, provided such bond is on file in the Office of the District Engineer prior to the time set for opening of bids and the penal sum thereto shall equal to 10 percent of the bond. Additional deposit security will be required for any individual bid made during the fiscal year that exceeds ten (10) times the penal sum of the bond. Such additional deposit security shall be equal to 10 percent of the differences between individual bid amount and the maximum amount covered by this bond. Standard Form 151 may be used for this purpose.

b. PERFORMANCE DEPOSIT OR BOND. In addition to the payments required under the provisions of this contract, each successful bidder will, within fifteen (15) calendar days after notice of acceptance of his bid by cashier's check, traveler's check, or postal money order of his bid by the Contracting Officer, deliver to the Government a certified check, cashier's check, traveler's check, or postal money order, payable to the order of the "Treasurer of the United States", in the amount of or percent of the total contract price in order to insure faithful performance under this contract. If the contract is performed to the complete satisfaction of the Contracting Officer, said deposit shall be returned to the purchaser upon completion of the contract. In lieu of the deposit of a certified check, cashier's check, traveler's check, or postal money order, the purchaser may furnish a performance bond, with surety approved by, and in a form acceptable to said Contracting Officer, the penal sum of such bond to be the same as the total performance deposits provided for above. Standard Form 25 may be used for this purpose.

c. PAYMENTS. The purchaser agrees to make periodic deposits as payments in advance for forest products when billed.

(1) For unit price sales, such deposits shall be:

(a) For all contracts of \$1,000 or less, the balance of the estimated total purchase price.

(b) For all other contracts, an amount to be established by the Contracting Officer but in no case less than 10 percent of the total estimated price. (In the event there is any surplus of funds to purchaser's credit on deposit upon completion of removal operations as required under the terms of the contract, a refund of such surplus will be made to said purchaser.)

(2) For lump sum sales, the purchase price shall be paid as follows:

(a) On bids below \$5,000, payment in full is required within ten (10) calendar days after notice of award. Bid deposit will be applied toward the amount due.

(b) For bids of \$5,000 to \$10,000, \$5,000 is required on award and the balance when approximately 40 percent of forest products has been cut. On bids \$10,000 and larger, \$5,000 on award and the remainder in amounts of \$5,000 as requested by Authorized Representative. The determination of the frequency of \$5,000 payments will be based on the volume of the material cut as determined by the Contracting Officer, having as its objective that the amount paid in shall at all times be the equivalent of at least 10 percent more than the percentage of forest products cut. To aid in this determination, the books of account and inventories of the purchaser shall be available for inspection by the Contracting Officer.

(3) Billings. The purchaser will be billed periodically for the estimated quantities of forest products determined by the Contracting Officer to be removed during a given operational period.

(4) Method of Payment. All payments shall be made by certified check, cashier's check, bank draft, postal or express money order, payable to the Treasurer of the United States. Billing payments will be remitted within ten (10) calendar days of the date of the billing, directly to the Project Officer or District Office, as specified under Special Sale Terms and Conditions.

3. DEFAULTS.

If, after the award, the purchaser breaches the contract by failing to make any payments as required, or by failing to remove the property as required, then the Contracting Officer may send the purchaser a

fifteen (15) calendar day, written notice of default (calculated from date of mailing), and upon purchaser's failure to cure such default within that period (or such further period as the Contracting Officer may allow), the purchaser shall lose all the right, title and interest which he might otherwise have acquired in and to the property as to which a default has occurred. The purchaser agrees that in the event he fails to pay for the property or remove the same within the prescribed time, the Contracting Officer at his election and upon notice of default shall be entitled to retain (or collect) as liquidated damages a sum equal to an amount hereinafter specified. Whenever the Contracting Officer exercises this election, he shall specifically apprise the purchaser either in the original notice of default (or in separate subsequent written notice) that upon the expiration of the period prescribed for curing the default the formula amount will be retained (or collected) by the Government as liquidated damages. The maximum sum, moreover, which may be recovered by the Government as damages for failure of the purchaser to remove the property and pay for the same shall be such formula amount. If the purchaser otherwise fails in the performance of his obligations thereunder, the Government may exercise such rights and may pursue such remedies as are provided by law or under the contract.

4. DISPUTES.

Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the purchaser. The decision of the Contracting Officer shall be final and conclusive unless, within thirty (30) calendar days from the date of receipt of such copy, the purchaser mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Secretary. The decision of the Secretary or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessary to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the purchaser shall be afforded an opportunity to be heard and to offer evidence in support of his appeal. Pending final decision of a dispute hereunder, the purchaser shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

5. TITLE PASSAGE.

a. UNIT PRICE SALE. All right, title, and interest in and to any included timber shall remain in the Government until it has been

measured, paid for, and removed from sale area or other authorized cutting area, at which time title shall vest in Purchaser.

b. LUMP SUM SALE. All right, title, and interest in and to any included timber shall remain in the Government until it has been paid for and removed from the sale or other authorized contract area.

6. MILITARY MISSION DELAYS.

Operations may be delayed from time to time, and area closed, because of military training. Purchaser will make daily checks with the Authorized Representative regarding military schedules affecting the sale area. If the sale area is closed as a result of military training for a continuous period of thirty (30) calendar days or a total of sixty (60) calendar days, then by mutual agreement between the Contracting Officer and the purchaser, the contract may be extended or terminated. If terminated, the purchaser will be relieved of any further responsibility of removal of the forest products sold hereunder, and any sums prepaid or on deposit will be equitably adjusted upon clearance and final inspection of the area. Under lump sum contracts, this adjustment will be made in the same manner as outlined in paragraph 9b. below.

7. EXTENSION OF TIME.

The Contracting Officer may by a Supplemental Agreement or Change Order extend the time allocated for removal under the following conditions:

a. When the total volume of the forest product designated for removal exceeds the estimated volume advertised, the time allocated for removal may be extended for an equitable period, based upon the minimum weekly production required to complete the removal of the original estimated contract volume within the original allocated time.

b. When purchaser desires a reasonable extension of time for his own convenience, provided that:

(1) The purchaser obtains concurrence for delay from any sawtimber or pulpwood purchaser also in the sale areas(s)

(2) The Contracting Officer determines that the extension will not endanger final required installation deadlines; and

(3) The consideration for the extension is mutually agreed upon by purchaser and said Officer.

c. For days lost by the purchaser due to closure of the sale area for military purposes ordered by the Contracting Officer or his duly Authorized Representative.

d. For reasonable mobilization time (other than initial mobilization) as a result of major interruptions during contract period and where it is determined necessary by the Contracting Officer or his duly Authorized Representative.

e. When purchaser experiences delay in commencing scheduled operations or interruption in active operations either of which stops removal of included timber from sale area(s) through curtailment of his field operations for ten (10) or more consecutive calendar days during normal operating season due to causes beyond purchaser's control, including but not limited to acts of God, acts of the public enemy, acts of Government, labor disputes, fires, insurrections, floods, or earthquakes.

f. When other Government requirements prohibit access or operation in the sale area(s), the purchaser shall be allowed one (1) calendar day for every day lost.

Note: To qualify for an adjustment in contract time or for a time extension, the purchaser shall notify the contracting Officer in writing thirty (30) calendar days prior to the contract termination date concerning any time extensions for reasons described in a through f above.

8. METAL CONTAMINATION.

a. Some timber included under this sale contract may be contaminated with military bullets and/or shell fragments; and it is not intended that the purchaser be required to harvest such trees when the contamination is determined to be excessive. If military metal is encountered, the purchaser will assist in determining the degree and extent of the contamination. After a thorough examination of the timber by the Contracting Officer, and a determination by the Contracting Officer that contamination is excessive, such timber or sale area will either be deleted from the contract or, if mutually agreeable, a reduction in the unit price may be negotiated only for this contaminated material. The reduced price will be based on the extra cost of harvesting and utilizing such contaminated timber.

b. In the event any portion of the sale area is deleted under a lump sum sale, the adjustment will be negotiated on the basis of a mutual cruise by representatives of both parties to determine volume and value of the timber deleted. The Government, however, will not substitute or replace contaminated timber with a like volume or area of timber for the amount withdrawn.

9. LIABILITY OF GOVERNMENT.

The purchaser shall hold the Government harmless for any damages to property or injury to persons which may arise out of the existence of nonexploded ammunition, metal or foreign objects in trees on the premises or for any damage whatsoever which may arise or result from the harvesting of timber by him or operations required hereunder.

10. SUPERVISION.

When cutting, logging, or other operations under this contract are in progress, the purchaser shall have a representative, readily available to the area of such operation at all times, who shall be authorized to receive, on behalf of the purchaser, any notices and instructions given by the Contracting Officer in regard to performance under this contract, and to take such action thereon as is required by the terms of this contract.

11. VEHICLE.

A list of vehicles authorized to transport forest products under this contract will be furnished to the Authorized Representative prior to the commencement of any removal operations. A number will be assigned each vehicle and such number will be plainly displayed on the front of the vehicle by use of a decal or other means acceptable to the Contracting Officer. Routes to be used for transportation of forest products from the reservation will be designated by said Officer.

Vehicles used in the transportation of forest products are subject to Federal, state and local laws and regulations governing the securing of loads, size weight, and load limitations.

12. PROTECTION.

a. GOVERNMENT PROPERTY. All Government property including telephone lines, ditches, bridges, and fences located within or immediately outside the exterior boundaries of the sale area, shall be protected so far as possible in logging and other operations, and if damaged, shall be repaired or restored immediately by the purchaser. Subject to the approval of the Contracting Officer, any telephone line or fence which may be damaged in felling or logging operations may be moved from one location to another, or specified trees may be left uncut. Roads, trails, and designated fire lanes shall at all times be kept free of logs, brush, and debris resulting from the purchaser's operations hereunder, and any road or trail used by the purchaser in connection with this sale that is damaged or injured beyond ordinary wear and tear through such use shall promptly be repaired by the purchaser to its original condition.

b. PERSONNEL. The purchaser shall exercise due caution to insure the safety of all personnel on the sale area and shall cooperate to make inspection of cutting, logging, construction, or other activities of the purchaser safe and economical for installation and District personnel.

c. STREAM COURSES. Purchaser's operations shall be conducted to minimize damage and pollution to stream courses within the sale area. Culverts or bridges will be required at all crossing points and such facilities shall be of sufficient size and design to provide an unobstructed flow of water. When a stream is temporarily diverted by purchaser's operations, it shall be restored to the natural course as soon as practicable prior to the season of major rainfall. All streams shall be cleared of debris including felled trees, tops, and logs resulting from purchaser's operations.

d. ENVIRONMENTAL QUALITY. The purchaser shall be required to conform to applicable Federal, state, county, and local regulations as necessary to prevent the pollution or degradation of environmental quality. Littering Government property with glass, metal, paper and plastic, oils, lubricants, fuels, detergents, or any other solid or liquid pollutants is prohibited. Persistent pollution of the land and water in and around cutting units or areas used to gain access to these units may be cause for immediate shutdown of harvesting operations and possible termination of this contract.

13. SECURITY, FIRE, SAFETY, AND OTHER REGULATIONS.

All operations in connection with the removal of forest products sold hereunder shall be subject to all local, state, and Government regulations pertaining to security, fire, safety, sanitary, and other rules and regulations as necessary for the protection of Government personnel and property as the Contracting Officer may from time to time prescribe.

14. FIRE SUPPRESSION.

The purchaser, his employees, agents and all subcontractors under him shall exercise due diligence and take all reasonable and practicable action both independently and upon request of the Contracting Officer or Fire Marshal of the reservation to prevent and suppress forest fires both within the sale area, and the area contiguous thereto. The purchaser agrees to reimburse the Government for the cost of fire suppression incurred as the result of his negligence or willful acts.

15. GRATUITIES.

a. The Government may, by written notice to the purchaser, terminate the right of the purchaser to proceed under this contract if it is found, after notice and hearing by the Secretary or his duly Authorized Representative, that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the purchaser, or any agent or representative of the purchaser, to any officer or employee of the Government with a view toward securing a contract or securing favorable treatment with respect to the performing of such contract, provided that the existence of the facts upon which the Secretary or his duly Authorized Representative makes such findings shall be in issue and may be reviewed in any competent court.

b. In the event this contract is terminated as provided in the subparagraph above, the Government shall be entitled to:

(1) Pursue the same remedies against the purchaser as it could pursue in the event of a breach of the contract by the purchaser, and

(2) Exemplary damages in an amount (as determined by the Secretary or his duly Authorized Representative) which shall be not less than three (3) nor more than ten (10) times the costs incurred by the purchaser in providing any such gratuities to any such officer or employee as a penalty in addition to any other damages to which the Government may be entitled by law.

c. The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

16. NONDISCRIMINATION IN EMPLOYMENT.

If the total value of this contract is in excess of \$10,000, Purchaser agrees during its performance as follows:

a. Purchaser will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. Purchaser will take affirmative action to ensure that applicants are employed and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. Purchaser agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this subsection.

b. Purchaser will, in all solicitations or advertisements for employees placed by or on behalf of Purchaser, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

c. Purchaser will send to each labor union or representative of workers with which he has a collective-bargaining agreement or other contract or understanding, a notice to be provided by Contracting Officer, advising the said labor union or worker's representative of Purchaser's commitments under this subsection, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

d. Purchaser will comply with all provisions of Executive Order No. 11246 of September 24, 1965, as amended by Executive Order No. 11375 of October 13, 1967, and the rules, regulations and relevant orders of the Secretary of Labor.

e. Purchaser will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, as amended, and by the rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by Contracting Officer and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

f. In event of purchaser's noncompliance with this subsection or with any of such rules, regulations or orders, this contract may be cancelled, terminated, or suspended in whole or in part and Purchaser may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order No. 11246 of September 1965, as amended, and such other sanctions may be imposed and remedies invoked as provided in said Executive Order by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

g. Purchaser will include the provisions of subparagraphs a through f in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, as amended, so that such provisions will be binding upon each subcontractor or vendor. Purchaser will take such action with respect to any subcontract or purchase order as Contracting Officer may direct as a means of enforcing such provisions, including sanctions for noncompliance, provided, however, that in the event Purchaser becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by Contracting Officer, Purchaser may request the United States to enter into such litigation to protect the interests of the United States.

17. LIQUIDATED DAMAGES.

Without derogation of any other rights afforded it by this contract, the Government through its Contracting Officer may determine the extent of damages arising from any of the causes hereinafter set forth, and the purchaser agrees to pay damages thereof in an amount to be determined by the Contracting Officer as liquidated damages for the injury and/or cost suffered by the Government, but in no event to exceed the maximum damage payments shown in Table 1.

18. CONTRACT TERMINATION.

The Government may terminate this contract at any time by giving ten (10) calendar days notice in writing to the Purchaser. In the event the contract is so terminated, the Government shall not be responsible for any damages or claims of whatsoever nature which result from said termination, except that funds on deposit in excess of that required in payment of material cut and removed shall be refunded, unless otherwise provided herein. Under lump sum contracts, this refund will be based on volumes and values determined under the same procedure as outlined in paragraph 8b, supra.

19. RECORDS.

Books and records of the Purchaser relating to all operations covered by this contract shall be open to inspection at any time by the Contracting Officer and available for audit with the understanding that the information obtained shall be regarded as confidential.

20. INVITATION, BID, AND ACCEPTANCE.

Invitation, Bid, and Acceptance shall constitute the entire contract of sale between the Purchaser and the Government.

Table 1

Maximum Damage Payments

CAUSE OR VIOLATION	MAXIMUM DAMAGE PAYMENT*
1. Cutting or damaging undesignated trees intentionally or through negligence or carelessness.	Double unit sale price or fair market value for the respective forest products.
2. Failure to use merchantable material.	Unit sale price for the respective forest products.
3. Removal of material harvested from the designated sale area without measurement in accordance with the terms of the contract.	Double the unit price for the respective forest product.
4. Continued failure to cut stumps in accordance with specifications.	Fifty (50) cents per stump.
5. Unavoidable damage to designated trees.	Unit sale price for respective timber product.
6. Failure to cut designated tree not exempted.	Double the unit sale price for respective timber product.
7. Degradation of environmental quality through persistent littering and pollution of Government land and water.	Actual cleanup costs incurred by the Government.

*When sale is under the lump sum method, the unit sale price(s) will be determined through appraisal by the Contracting Officer.

VII. SPECIAL SALE TERMS AND CONDITIONS

1. COMMENCEMENT.

The purchaser will commence removal of the forest products within
() days after notice to proceed.

2. SCHEDULE OF REMOVAL AND COMPLETION.

The purchaser agrees to remove from the sale area all forest products designated to be removed under this contract prior to date(s) shown below and at the minimum production rate specified herein:

Item 1: _____	Item 5: _____	Item 9: _____
Item 2: _____	Item 6: _____	Item 10: _____
Item 3: _____	Item 7: _____	Item 11: _____
Item 4: _____	Item 8: _____	Item 12: _____

The minimum rate of production will be determined by dividing the number of weeks within the period of time established for the item purchased into the estimated volume or quantity of the forest product included under such item.

3. PERIODS OF OPERATIONS.

Unless authorized by the Government, removal of forest products will not be permitted on Saturdays, Sundays, or on any Government holiday and will be accomplished only during the hours designated by the Contracting Officer. The daily schedule of hours may be modified due to seasonal changes by notice in writing to the purchaser.

4. IDENTIFICATION OF FOREST PRODUCT(S) INCLUDED IN SALE.

The purchaser accepts the marking as final, except that, by mutual agreement between the Contracting Officer and the purchaser, changes in the marking can be made by marking additional trees or removing the marks from trees already marked when such changes are clearly the result of errors or omissions in the original marking. Trees to be removed in the construction of logging trails and loading points, and trees damaged in logging will be marked or designated for cutting as needed.

5. MERCHANTABILITY.

Trees and forest products cut from those trees which equal or exceed the specifications set forth below are considered merchantable and will be cut and used. Tops resulting from the harvest of pine sawtimber trees which are within said merchantability specifications will be utilized as pulpwood.

SPECIES AND PRODUCT	TREE SPECIFICATIONS				
	UNITS PER TREE	LENGTH FEET	DIAMETER INSIDE BARK AT SMALL END	NET SCALE IN % OF GROSS SCALE	MINIMUM NET SCALE

6. LOGGING OPERATIONS.

The order of logging will be designated by the Contracting Officer. Purchaser's proposal for sequence of cutting will be considered. All forest products will be removed and all phases of operations completed within the assigned operational unit prior to commencement of operations in another operational unit. From time to time, due to military activities, the order of operations may be realigned by the Contracting Officer. Operations under this contract will be conducted in a manner that will not interfere with removal operations under other contracts. In the event more than one operational unit is purchased by a single pole-and-piling or sawtimber buyer and the pulpwood by separate buyers, the higher timber product purchaser may be required to harvest in the several operational unit areas at the same time, or in such an order to permit purchasers of pulpwood in the same areas to obtain continuous and required production requirements. Pulpwood removal will follow the sawtimber harvesting as closely as possible without endangering workers, but in no case more than twenty (20) days cutting behind sawtimber purchaser, unless otherwise directed by the Contracting Officer in writing. When special areas of pulpwood are included under the sale for the

purpose of regulating pulpwood purchaser's progress at normal rate, harvest within such areas will be subject to advance approval of the Government. Loading points will be in open areas and not less than ___ ft from main and ___ ft from post roads unless otherwise authorized by the Government.

7. STUMP HEIGHTS.

All trees to be harvested will be cut as low as possible and not higher than ___ in. for pine and ___ in. for hardwood and cypress above the ground line on the highest side, except when the measurements are impractical in the judgment of the Contracting Officer.

8. LOPPING.

Pine tops and limbs will be lopped to within ___ in. of the ground within ___ ft of ___ or other area designated by the Contracting Officer. Sawtimber and pulpwood purchasers will lop all of their respective tops as tree felling progresses.

9. SAWMILLS.

a. ☐ Sawmills will not be permitted on the reservation.

b. ☐ Sawmills will be permitted on the reservation at locations authorized by the Contracting Officer and will be operated only on weekdays between the hours authorized. Location and the minimum requirements for the preparation and operation of all sawmills will be approved and prescribed in advance. Strips, slabs, and mill waste (including sawdust) will be burned in slab pits or removed from the reservation as it is produced. Sawmills will be equipped with slab conveyor belts. Mill sites will be daily policed and maintained in a clean condition acceptable to the Contracting Officer. Upon completion of sawmill operation and abandonment of the area, sawmill sites will be clean, free of all equipment and machinery, and acceptable to the Contracting Officer before crews will be permitted to operate elsewhere on the sale area.

(Delete inappropriate provisions.)

10. WEIGHT FACTORS (UNIT PRICE SALE).

Weight factors to be used to determine the number of units of the respective forest product are as follows:

Pine Sawtimber:	_____	No. equal to 1 MBF (Scribner Dec. C Log. Rule)
Yellow Poplar Sawtimber:	_____	No. equal 1 MBF (Scribner Dec. C. Log. Rule)
Cypress Sawtimber:	_____	No. equal 1 MBF (Scribner Dec. C. Log. Rule)
Other Hardwoods:	_____	No. equal 1 MBF (Scribner Dec. C. Log. Rule)
Pine Pulpwood:	_____	No. equal 1 std cd (128 cu ft)
Hardwood Pulpwood:	_____	No. equal 1 std cd (128 cu ft)

Timber Products Harvested on a ton basis: 1 ton equals 2,000 lb.

11. VOLUME DETERMINATION.

a. UNIT PRICE SALE.

(1) The quantity of units sold under this contract of sale will be determined by weighing each truckload at a Government operated weight station (when available), or at a consumer mill or commercial weigh station acceptable to and approved in writing by the Contracting Officer. Purchaser operated weight scales will not be authorized. When the use of consumer mill or commercial scales is authorized, the purchaser will pay the cost of weighing, if any, and furnish to the Government Authorized Representative, on a frequency to be established, certified weight tickets for each load showing data and information required by the Contracting Officer. With the written consent of the Contracting Officer, the quantity of units may be based upon cubic foot measurements, using an acceptable weight conversion factor. Such quantities will be based on net units plus any loss due to purchaser's fault. Mixed loads of various items under the contract may be removed, provided payment shall be at the rate of the item having the highest unit price.

(2) Forest products sold under this contract may be removed as a product other than that specified, provided that when the sale is under the weight method, the product is weighed with all bark intact or provisions made for bark weight through mutual agreement.

b. LUMP SUM SALE.

The timber described to be harvested is sold as a lot in its entirety for one lump sum and the Government makes no guarantee or warranty as to the volume of material.

12. BINDER CHAINS AND SECURITY SEALS.

Binder chains to secure loads will be affixed to the vehicle in such a manner that all forest products are securely locked in position by use of a metal security seal as directed by the Contracting Officer prior to the load leaving the sale area. The purchaser will be held responsible for all metal security seals issued to him and each seal will be accounted for in the manner prescribed.

13. TREE PAINT AND EQUIPMENT.

Marking hammers, paint or equipment for painting, or any other equipment similar to that used by the Government in the marking of trees, logs, or bolts are prohibited from the Government reservation.

14. EQUIPMENT.

Without regard to weather or ground conditions, the purchaser must at all times keep tractors, trucks, or other required equipment in operation on the sale area, as determined by the Contracting Officer, to maintain the minimum production rate during each calendar month and to complete this contract of sale within the time allocated.

15. OTHER.

APPENDIX B:
TIMBER HARVESTING GUIDELINES
FOR MAJOR ARMY INSTALLATIONS

SUGGESTED TIMBER HARVESTING GUIDELINES

	<u>Page</u>
1. PURPOSE.....	72
2. OBJECTIVES OF THE ARMY TIMBER HARVESTING PROGRAM.....	72
3. CURRENT AUTHORITY, MISSION, RESPONSIBILITIES, AND PROCEDURES.....	73
4. OBJECTIVES OF DISTRICT AND FIELD STAFF.....	76
5. COORDINATION OF ACTIVITIES.....	76
6. METHODS OF DISPOSALS.....	78
7. PREDISPOSAL PLANNING.....	81
8. ACTIONS DURING ADVERTISEMENT.....	82
9. SOLICITATION OF BIDS AT FIELD LEVEL.....	83
10. CONTRACT ADMINISTRATION.....	83
11. AUDITING OF SCALE AND MEASUREMENT RECORDS.....	103
12. TIMBER CRUISING, ESTIMATING, AND EVALUATING.....	104
13. SYSTEMATIC POINT SAMPLE METHOD.....	105

ATTACHMENTS

	<u>Page</u>
A. Timber Harvest Sales Contract (Long Form)	106
B. Short-Form Invitation to Bid	113
C. Disposal Plan Format	116
D. Resident Forester/Inspector Checklist	117
E. Timber Harvesting Daily Volume Chart	120
F. Report of Timber Harvested	121
G. Form Letter on Production Schedule	122
H. Cost and Income	123
I. Record of Post Clearance	124
J. Request for Extension of Time	125
K. Security Report	126
L. Letter to Pulpwood Purchaser	128
M. Tally Sheet Poles and Piles	132
N. Marking Tally Sheet	133
O. DBH of Poles of Different Classes and Lengths -- Table 1	135
P. Information on Pine Poles -- Table 2	136
Q. Number of Trees per Cord of Different Size -- Table 3	138
R. Number of Cords per MBF -- Table 4	139
S. Circumference of Different Classes and Lengths of Poles -- Table 5	140
T. Volume of Long Logs (Even Lengths) -- Table 6	141
U. Volume of Long Logs (Odd Lengths) -- Table 6a	142
V. Tree Volume -- Table 7	143
W. Longleaf Pine Pulpwood Volume -- Table 16	144
X. Loblolly Pine Pulpwood Volume -- Table 17	145
Y. Timber Harvesting Authorizaton Card	146
Z. Contract Inspection Report	147
AA. Justification and Recommendation for Use of Commercial Scales	148
BB. Basal Areas and Plots per Acre	149
CC. Minor Forest Products Permit (Fuelwood or Firewood)	150

1. Purpose. This appendix presents guidelines to assure the effective performance by the Army in forest management programs on military installations.

2. Objectives of the Army Timber Harvesting Program.

a. To provide orderly and efficient timber harvesting under approved forest management plans by well planned, effectively administered timber sales.

b. To complete required harvesting with as little ecological disturbance as possible by considering:

1. The primary mission of each installation and the ecological interdependence of all natural resources.

2. The protection and preservation of special interest areas and habitats used by rare and endangered species and required by the Endangered and Threatened Species Conservation Act of 1973 - PL 93-205.

(a) The preamble to PL 93-205 states:

"The Congress finds and declares that one of the unfortunate consequences of growth and development in the United States and elsewhere has been the extermination of some species or subspecies of fish, wildlife, and plants; that serious losses in species of wild animals with educational, historical, recreational, and scientific value have occurred and are occurring; that the United States pledge itself . . . to conserve and protect, where practicable, the various species of fish, wildlife, and plants facing extinction; that a key to more effective protection and management of native fish and wildlife that are endangered or threatened is to encourage and assist the States in developing programs for such fish and wildlife; and that the conservation, protection, restoration, or propagation of such species will inure to the benefit of all citizens."

(b) Specifically, PL 93-205 states:

"The purposes of the Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, protected, or restored; to provide a program for the conservation, protection, restoration, or propagation of such endangered species and threatened species; and to take such steps as may be appropriate to achieve the purposes . . . of this section."

c. To promote greater cooperation among the various Government agencies concerned with land management.

d. To prevent waste of natural resources.

3. Current Authority, Mission, Responsibilities, and Procedures.

a. Authority.

1. References.

(a) Federal Property and Administration Services Act of 1949 as amended.

(b) PL-86-717.

(c) AR-405-90.

(d) AR-420-74.

(e) ER-405-1-900.

(f) EM-1130-2-302.

(g) ER-405-3-750.

(h) ER-405-1-913.

(i) ER-405-2-835.

(j) ER-405-23-912.

2. Comments on references.

(a) In addition to the authority granted to Division and District Engineers, Installation Commanders are authorized to sell small lots of timber which have an estimated value of less than \$300 and are sold under an approved forest management plan (see AR-405-90, para 4-4). The total of such small lot sales cannot exceed \$4,000 in any one calendar year.

(b) AR-420-74 includes guidance from DOD Directive 5500.4, which describes policies and procedures governing the establishment and maintenance of a natural resource management program. DOD Instructions 4170.6, 4170.7, and 4170.8 also explain how to implement natural resource management.

b. Mission.

1. The Corps of Engineers acts as disposal agent for the using installation. As agent, the Corps of Engineers, acting through the District Engineer, Real Estate Division, has a fiduciary relationship to

the installation command. All persons involved in timber harvesting as well as disposal will tell the installation command about any economic, public, and industrial activity which could relate to land management and land-use alternatives. (Timber Harvesting Representatives do not make timber management decisions, but diplomatically try to help the installation by making sure that full and accurate information about marketing alternatives is available.)

2. The persons responsible for the timber harvesting program must be sure their program is flexible enough to allow rapid adjustments in applied practices to match changes in military and other requirements. Military training activities will be observed and analyzed in terms of their land-use and forest configuration requirements to insure that the possible effects of disposal activity are understood. Markets, marketing methods, and advances in resource-use technology will be reviewed to insure that all information about land-use potential is available. Land-use practices will be modified and adapted to fit existing, higher priority, concurrent land use, and proposed practices will be described in terms of their effect on higher priority land uses.

3. Installation personnel will define the use of natural resources in terms of the needs (training, market, management, or other) that the natural resources can satisfy. This will allow the marketing agency to better explain the interdependent function of different units operating within an installation's overall land management program.

c. Responsibilities.

1. The Corps of Engineers is responsible for disposing of excess real property as delegated by the General Services Administration (GSA).

2. The authority of the Chief of Engineers to dispose of real property or real property components has been delegated to Division and District Engineers.

3. The Installation Commanders have been delegated the authority to make excess timber available under the approved forest management plan. The Installation Report of Availability goes to the next higher command for approval, then is forwarded through channels to District for final disposition.

4. The District Engineer may delegate part of his contractual authority to the Chief, Real Estate Division. In turn, the Chief, Real Estate Division, may delegate part of his contractual authority to the Chief, Management and Disposal Branch.

5. In most cases, the Chief, Management and Disposal Branch, delegates the field administration of timber harvesting contracts to an Authorized Representative of the Contracting Officer or to another designated person.

d. Procedures.

1. The Installation Forestry Section, which is under the Director of Military Programs Division on each installation, marks or designates timber for sale which is in excess of Government needs and is authorized for sale under a current approved forest management plan. The Installation Forester prepares the Timber Availability Report which identifies available volumes by species and includes any special sales conditions required by the installation. The Timber Availability Report is forwarded to the next higher command (FORSCOM, TRADOC, or DARCOM) for approval. Normally, each installation sends an annual fiscal year Timber Availability Report, which is distributed to the District office. This procedure shortens the approval time at higher headquarters, thus allowing the District office more time to implement and execute the timber sale.

2. After receiving the Report of Availability, qualified District or field representatives will inspect the sale area(s) to make sure that all conditions noted in the report are correct. During this field inspection, data are collected for an appraisal report and disposal plan. Field data include information on ground conditions, average volume per acre to be harvested, general access to the sale area, quality of the timber, and distance from sale area to local timber markets. Maps of the sale area, harvesting plan, and drafts of the Invitation for Bid are prepared by the Authorized Representative and forwarded to the District office for processing. After receiving this information, the draft Invitation for Bid is finalized and issued to all prospective timber buyers within the market. During the advertisement period, prospective bidders are shown the sale timber. After bid opening, award of contract, and notice to proceed have been issued, field personnel coordinate all field inspection activities with the contractor's field representative(s).

3. Lump sum sales are often used where administrative field personnel are limited and security is difficult. The volumes sold are generally verified by timber harvesting personnel. Normally, lump sum sales occur on small installations, and on large installations where it is reasonably certain that the sale area will not be used by the military during the contract period.

4. After the conditions and terms in the sale agreement are satisfied, District office and installation forestry personnel often make a joint inspection of the sale area(s) to insure faithful performance of the contract. If a joint inspection is not conducted, District office and installation forestry personnel separately review the sale area(s) and forward their findings in a clearance report to the District office. Upon notification that the contract has been satisfactorily completed, the purchaser is given final clearance, the contract is closed, and all advance payments which were more than the cost of the harvested timber are refunded along with the cash performance deposit. In the case of a

surety bond, the insurance company is notified that the purchaser has fulfilled his contractual obligations to the satisfaction of the Government, and is advised to release the performance bond furnished by the purchaser. The following are notified of this action: the bonding company, purchaser, local surety bond agent, Chief, Finance and Accounting Branch, Office of Record File, and the field office.

4. Objectives of District and Field Staff. In order to effectively accomplish the objectives of the timber harvesting program, the District and field staff must:

- a. Coordinate activities at the military installation
- b. Plan and promote predisposal, both before and after the issuance of an Invitation to Bid
- c. Obtain and maintain well-planned and effective contract administration, including security, for the protection of Government-owned property
- d. Maintain good public relations
- e. Promptly inform the District office of unusual and important events.

5. Coordination of Activities. When timber harvesting operations are coordinated with other activities, the approved forest management plan can be implemented efficiently. On military installations, such coordination prevents interference with the installation's primary mission, e.g., troops training.

a. Approved Forest Management Plan. Initially, the Authorized Representative should become familiar with all requirements of the approved forest management plan, particularly cutting cycles, projected schedules for cutting of logging areas, zones or units, species and volumes of timber, firing ranges and training areas, and logging conditions. Periodic reviews should be made with the Installation Forester to insure that the requirements and schedule of the forest management plan are met, particularly by the Corps of Engineers. A copy of each installation's approved forest management plan should be reviewed by the Management and Development Branch. Record of all reviews should be documented on a Disposition Form, with a copy filed at the District office.

b. Orientation and subsequent briefing of Installation Engineer and Provost Marshal. On military installations, the objectives of the Authorized Representative should be periodically reviewed with the military authorities to be sure that they clearly understand, and continue to understand, the assigned functions of the Corps of Engineers. It

should be emphasized that the Corps' primary objective is to work closely with military installations; i.e., by calling conferences at the time new Installation Engineers and Provost Marshals report for duty, and subsequently through meetings (at least quarterly) to inform the Installation Engineer of progress on availabilities, to discuss field operations, and to review any particular installation problems. In addition to this objective, the Installation Engineer and Provost Marshal initially should be briefed on:

1. The responsibilities of the Authorized Representative
2. The contracts in effect
3. The method of administration, inspection techniques, scaling, or weighing
4. Security program
5. Other points of mutual importance.

A Corps of Engineers' color slide documentary on timber disposal procedures can be used to orient Installation Engineers and others involved with resource management and security. Periodic field trips can also be used to tell Installation Engineers about timber harvesting. All conferences and field reviews must be closely coordinated with the Installation Forester.

c. Review of activities with Installation Foresters. Availabilities, when prepared, are reviewed in detail with the Installation Forester, first in the field, and then as to special harvesting conditions or requirements. After harvesting begins, the Installation Forester should be kept informed by the Authorized Representative on the progress of cutting and be invited to participate in periodic inspections of field operations. (Also see para 10.) During these meetings, mutual problems should be discussed and every effort made to encourage good relations to assure that the Authorized Representative and the Installation Forester cooperate. However, the Authorized Representative should take the initiative to see that installation personnel understand that all contract administration will be done by the Authorized Representative, and that installation personnel will not deal directly with a contractor.

d. Clearance with range firing and other military training schedules. It is necessary to coordinate and clear harvesting activities with Range Control Headquarters. This is necessary not only for safety, but to prevent interference with military functions and to eliminate extra work and cost on the part of the timber purchaser. To require purchaser's personnel to move equipment in and out of an operational area is costly and results in poor production. Without advance planning and proper notification of the purchaser, such a requirement can create

ill will which could decrease interest in bidding on a future offering of timber. A clear and simple system of coordination with the G3 Section or Range Control Officers must be established and proper follow-ups made to verify the use of ranges or training areas. This can be accomplished by securing weekly or periodic firing or training schedules from the G3 Section or Range Control Officer, either directly or through the Installation Engineer or Forester, and then following up the day before by phone. Clearances on a daily basis can be by individual ranges or training areas by name, or other designation, or by zones of operation. The latter method is very effective and easily established by dividing the installation map into zones or sections; each zone or section is assigned by a number or a letter of the alphabet. Clearance must then be verified daily by calling the Range Officer to request the activity schedule. However, regardless of the system adopted, it is the Authorized Representative's responsibility to maintain close coordination with Range Control Headquarters.

6. Methods of Disposals. The sale of timber from military installations is not, as a general rule, adaptable to the lump sum or tract sale method, because the timber is in an area which is subject to interruptions or interference by military training. Since there is insufficient time to prepare accurate and reliable cruise estimates, and there is the possibility that tree markings will be destroyed by range fires, the timber is usually sold via the unit price method. The volumes harvested are determined through actual scale by Government personnel on sawtimber, poles, piles, and posts, by consumer mill tally measurement on pulpwood and stumpwood, or by the weight method.

a. Unit Price Sale. Under the unit price sale, the timber is advertised or offered on a timber product basis such as sawtimber, poles, piling, or pulpwood; by species or groups of species, within designated logging units or groups of logging units; and by bids invited or accepted on a per-unit price. This type of sale can be undertaken either on a weight method, log scale or measurement method, or a combination of methods. When weight method is used, the weight is converted to units (MBF, cord, or tons) through a predetermined conversion factor or one that is determined by test scale. Under the log scale or measurement method, sawtimber logs are scaled under the Scribner Decimal C Log Rule, poles and piles are scaled under American Society for Testing and Materials (ASTM) Standard Specifications, and pulpwood is measured on a Standard Cord (128 cu ft). For unit price sale contract and weight contract, see Attachment A.

b. Lump Sum Sale. A lump sum sale is where all marked or designated trees are sold on a lot basis for a lump sum amount. The lump sum sale method of timber disposal should be used wherever the sale volumes can be accurately substantiated by an experienced forester, and whenever it is certain that installation requirements for the sale area during the contract period for removal will not cause any major operational stoppages or modifications of the contract volume. A strong competitive

timber market will cure deficiencies in volume estimates and appraisals. In each timber disposal action, the decision to use the lump sum sale method should be based on the following factors:

1. Savings. The savings which ordinarily accrue from lump sum sales are the difference between the cost of scaling or otherwise measuring the product (which is eliminated) and the cost of estimating the product to be produced by tally, cruise, etc. (which is added). These savings, and such other incidental benefits as may exist, must be great enough to overcome some of the inherent disadvantages of lump sum sale.

2. Flexibility. The inflexibility of lump sum contracts is a disadvantage which cannot be ignored. Lump sum contracts require that the purchaser be able to remove all of the timber sold. If military training activities, woods fires, other Government operations, or other unforeseen circumstances delay, interfere with, and prevent the removal of all or portions of the timber, or change the volumes after it has been sold, the Government is usually liable for the volume adjustments, damage, or loss which the contractor has experienced. Such a claim can only be settled through the expensive method of field examination and tally of the trees damaged or those which the contractor was prevented from removing. The unit price contract avoids this problem.

3. Suitable timber, ground conditions, and location. Certain unusual features such as rough or inaccessible topography, erratic timber marking, metal contamination in trees, unusually dense undergrowth, and other similar characteristics might adversely affect an accurate cruise estimate and make a lump sum sale impractical.

4. Personnel availability. The lump sum sale may be desirable where field personnel are not available fulltime, or where the size or nature of the sale prohibits assigning a fulltime staff. Lump sum sales are not necessarily limited to those installations where permanent personnel are not assigned. Lump sum sales only eliminate the cost of scaling; they do not reduce the requirements for inspection. Savings realized from skimping on inspection inevitably result in losses under the contract and embarrassment to the Corps of Engineers.

5. Volume, value, and size of sale, and cruising technique.

(a) Economy and efficiencies, not the estimated sales price, should be used as the primary basis for determining whether the material should be offered for lump sum sale.

(b) The product value should be such that the net income received on the lump sum sale would not be significantly less than the net returns from the timber if sold at unit price. Lump sum sales of hardwood in which there is little or no difference between value of the species can be considered; where the volume is significant and certain species

have significantly higher values than others, use the unit price sale method.

(c) Small sales of timber (less than \$5,000) are usually more adapted to lump sum selling because of reduced overhead.

(d) Cruises, appraisal values, volumes and/or product determinations will be prepared by qualified District Engineer forestry personnel, since an unreliable volume estimate could have an adverse effect upon the sale. The amount of timber to be sampled, and the required accuracy of that sample will be determined by the forester in charge of cruising and appraising. The forester will consider all variable factors to gross volumes to obtain net volumes, value of timber, irregularity of timber stands, ground and logging conditions, and administrative costs. The cruise should not be influenced by volumes made available by the installations. The appraisal will be prepared on the basis of the net volumes cruised. Timber cruise, tree tallies, plot data, and appraisal information will be considered confidential and will be made available to only the appraiser and the person making the award. A separate information sheet may be published and may accompany invitations for bids. This sheet can include:

(1) The Government's estimates of the number of trees marked by diameter class and species

(2) Gross volume to nearest MBF or cord (by species)

(3) The basis of above information in terms of cruise percent or percent tree tally, and

(4) Such information is estimated only (the purchaser must satisfy himself as to the approximate number of trees, quality, net volume, species, that he is purchasing). The Government makes no guarantee as to the number of trees marked, species marked, quality, or volume. Because of the expense involved, cruises will not be made until after preliminary analysis has indicated that all other factors are favorable.

6. Economics (cost of selling). Disposal costs should be less than the unit price sale, giving due weight to probable value loss caused by using the lump sum method. Where justification is in doubt, disposal costs may be included in the appraisal. These costs should compare saw-timber scaling time under a unit price arrangement (includes auditing and billing costs, but excludes daily travel time to and from sale area unless one method or the other affects the frequency of travel) to cruising costs under the lump sum method (which includes office summarization and travel time of District Foresters to and from home stations).

7. Isolated sales. Lump sum sales are not necessarily best for small, isolated sales if inspection costs are increased.

7. Predisposal Planning. The Authorized Representative can adequately plan future disposals with an understanding of the requirements and cutting schedules of the approved forest management plan. This is done through daily observations of military or project activities, and by periodically checking with installation or project personnel to determine what proposed or future plans and approved projects under the Master Plan for the installation or project may indicate volumes of timber in the way of new construction, within utility and road rights-of-way, or in training areas. The Authorized Representative should encourage regular submission of availabilities in economic sizes to provide for an even workload for the timber harvesting office. He should also maintain a uniform field operation to prevent "low" and "peak" workloads which require relocating or laying off personnel. Steady work flow results in a low operating cost for the field office, which is necessary to sustain permanent field offices. Where availabilities are not sufficient in number, size, or value to sustain an office, the District office will encourage installations to postpone sales (upon notification from the Authorized Representative), until there is sufficient volume and value of timber to sustain an office. Timely predisposal planning helps establish items and conditions of invitations and their issuance sufficiently in advance to provide for orderly and effective removal of the timber in cooperation with installation or project operations, promotional work with prospective buyers, maximum use of assigned personnel, and effective contract administration.

a. Review of availabilities. The harvesting requirements (including deadlines) and field conditions of each new timber availability will be reviewed in detail with the Installation Forester or his assistant prior to its submittal to the District office.

The written Report of Availability must be thoroughly reviewed; the Authorized Representative should accompany the Installation or project representative to the proposed sale area to examine field conditions. Specifications for harvesting must be concise and understood by both parties within the criteria of the terms and conditions of the Corps of Engineers' standard Invitation to Bid forms; i.e., special requirements should not adversely affect the disposal or value of the timber. The exchange of property for services is prohibited under paragraph (b)(5), Section 642.95 of AR-420-74. If points of discussion on the requirements of the availability cannot be resolved at field level, the District office will be contacted for assistance. Agreement with the installation or project should be reached before availability is forwarded through channels to the District office. Authorized Representatives will keep in touch with Resident Engineers to determine future needs for timber disposal on Corps of Engineers construction sites. Followup action will be taken to see that timber harvesting and stockpiling specifications are placed in construction invitations.

b. Disposal plan. A disposal plan (with a copy of the availability) will be prepared by the Authorized Representative and forwarded to the District office as soon as possible after the availability review or as appropriate for the implementing District. This plan can be a disposition form and should include, in addition to pertinent information reflected in the suggested form of the disposal plan (Attachment C), a draft of the proposed invitation prepared on the appropriate standard form(s). A supply of such forms will be maintained at the field level.

8. Actions During Advertisement.

a. Review of Invitation to Bid and showing of timber to prospective purchasers. At the same time the Invitation to Bid is mailed to prospective bidders, copies are given to the Authorized Representative for his information, for use in coordinating with Installation or Project Forester, and to use as a guide when showing timber to interested bidders. The Authorized Representative should review the invitation, become familiar with the items offered for sale, the time set for showing timber, and all terms and conditions of sale. Any irregularities in the invitation should be reported to the District office. The Authorized Representative should visit the Installation or Project Forester to review the invitation and to request that prospective bidders calling at the forestry office be referred to the District office so that a representative of the District can accompany the prospective bidders to the sale area to explain details of the advertisement. While showing timber offered for sale, the District representative should explain the general terms and conditions of sale, emphasizing the time limits established for harvesting, the type of equipment necessary to operate in the sale area, and the bid and advance deposits required. Any questions that cannot be answered at the field level should be referred to the District office before the date set for opening bids. A register will be maintained at the Project office of prospective bidders who have been shown timber on each invitation.

b. Promotional work. As a followup to predisposal promotional work, the Authorized Representative will contact all active purchasers and other timber dealers who have previously had contracts with the Government or have shown an interest in bidding on timber offered for sale by the Government. It is a responsibility of the field and District office to create interest among forest products purchasers, including those who purchase pulpwood, poles, piling, sawtimber, veneer logs, plywood, and specialty products. Personal contact rather than telephone or mail contact should be made, where feasible.

9. Solicitation of Bids at Field Level.

a. After Formal Advertisement. When no acceptable bids are received in response to formal invitations on real property component (timber) with a fair market or minimum accountable value of more than \$1,000, and when the District office decides that further public advertisement will serve no useful purpose, the Authorized Representative may be directed to solicit a revised quotation from the responsible high bidder who responded to the formal invitation. If this action fails to secure an acceptable bid, the District office will be informed and a decision on further action made at that level. Solicitation of bids will be in accordance with ER-405-1-913.

b. Use of Short-Form Advertisement. On emergency sales of timber, and when time permits, a formal written invitation will be issued in the suggested form attached as Attachment B. General Sale Terms and Conditions, and Additional Terms and Conditions of Sale will be included (by reference) with a statement that they may be reviewed at the project or District office. Short-form advertisements are convenient because they can be issued quickly; in addition to the usual information, the Item Bid Page includes the location of the timber and the time for removal. All formal written invitations are generally issued by the District office. However, the short-form advertisement may be prepared and issued at the field level under the conditions and limitations prescribed by the District office. Bids received will be recorded and submitted to the District office as outlined in the referenced subparagraph. Resulting contracts will be processed for execution at the District level.

c. Informal Solicitation of Bids. When small volumes of timber valued at less than \$1,000 are made available on an emergency basis -- such as timber in the way of new construction, within utility or road rights-of-way, or within range or training areas -- the Authorized Representative may be directed by the District office to solicit informal quotations by telephoning or having the quotation recorded on an Abstract Bid, DD Form 1501, and requiring the original and two copies to be submitted to the District office with recommendation for award. Appropriate bid deposits will be secured and will accompany the Abstract for Bids. Bid deposits should be recorded on ENG Form 3313 (Remittance Register) and the original and four copies submitted to the District office. Determination of award will be made by the District office. It will prepare the formal contract and submit it directly to the successful bidder and also notify the Authorized Representative.

10. Contract Administration. Well-planned and efficient contract administration, including security for the protection of Government-owned property, is vital in obtaining and maintaining a strong, orderly, and effective timber harvesting program. The Authorized Representative and the inspection personnel must deal firmly but courteously with the purchaser and purchaser personnel, and secure strict compliance with all

terms, conditions, and specifications of the contract as they are written. All field personnel must first familiarize themselves with the conditions of the contract and clearly understand their interpretation. In the event the Authorized Representative does not clearly understand a condition, an interpretation should be requested from the District office. The next step in securing good contract administration is to be sure that the purchaser clearly understands the terms and conditions of sale. This can be done through precontract conferences (see following paragraphs). To maintain good contract administration, the Authorized Representative must make sure that his staff carries out continuing, thorough field inspections of harvesting operations. The Authorized Representative must check inspection personnel regularly in the operational areas, and review progress at the end of each working day. Further, he must use all assigned manpower effectively, generate the respect and confidence of his subordinates, and, in turn, recognize and resolve problems to their understanding. Finally, he should keep supervisory personnel advised of field activities and secure their assistance when necessary.

a. Operational Planning

1. Before cutting a sale area, the Authorized Representative will confer with the prime purchaser and the purchaser's woods superintendent to explain and discuss harvesting and contract procedures. Of major importance will be discussion of equipment and personnel requirements; security measures; range firing schedules; method of payment for timber; use standards; installation regulations; assignment, inspection, and operation of vehicles; fire and safety regulations; and assignment of logging units. A predisposal checklist which includes all aspects of sales work will be used for the conference (Attachment D). After the conference, the checklist will be signed by all parties and the original forwarded to the District office.

2. Inspection personnel will be carefully assigned to assure they are used fully and effectively. If possible, the same inspector should continue with the woods operation throughout the tenure of the contract. This will help assure the maintenance of close and adequate inspections and aid in the placement of responsibility.

3. The Authorized Representative will always require the purchaser to place sufficient equipment and personnel to work in order to maintain production as specified in the contract. If the order of cutting is not designated under the terms of the contract, it will be designated by the Authorized Representative. If there is a choice, the purchaser will be assigned the most undesired portions of the sale first. The exception will be sale areas where there is a chance that military activities may cause damage to certain good timber, test run areas under weight sales, or when, for some foreseeable reason, it is to the advantage of the Government to reserve this policy.

b. Project office operations and administrative functions. The project office must maintain accurate records of all harvested timber contract actions, property accountability, and vehicle care. In addition, correct reports must be promptly submitted to the District office. This will allow the Authorized Representative and inspection personnel enough time to finish inspecting and supervising field operations. Administrative functions should begin with a clear understanding of all of the office's responsibilities. Various responsibilities should be given to the personnel with authority to act with a minimum of supervision. The project administrative assistant should relieve the Authorized Representative of practically all office administrative duties, including securing or obtaining range clearances. The primary functions of a project office are:

1. To prepare and draft the disposal plan of the proposed Invitation to Bid and to do all promotional work, including making appointments to show timber when advertisements are issued
2. After the award of a new contract and receipt of notice to proceed, to arrange for inspection of the purchaser's vehicles or equipment at the installation, assign truck numbers, and establish a register or list of trucks and drivers to be used on the respective contract operations
3. To maintain a record of harvested timber and to make periodic reports to the District office
4. To safeguard security seals and weight tickets, and to maintain seal and ticket records
5. To maintain control maps, progress charts, records of working days, and a cost chart
6. After receiving the copy of bills for harvested timber, to take action to collect within a specified time
7. To maintain records on assigned vehicles and other Government property and to issue daily trip tickets according to established procedures.

(a) Records and Reports. In addition to individual contract files, policy files, property and vehicle records, and other similar records required by regulations, the office must prepare and maintain reports for the purpose of billing purchasers for harvested timber. These reports also help determine progress in accordance with projected schedules, and help safeguard or insure the security of Government property. This section covers the latter type of records and reports. To insure that the contractor is not billed for wood not harvested under his contract, all records pertaining to the volumes harvested under individual contracts must be accurate.

(1) Production Records. Project office records will show daily production under each sales contract (daily totaling weight tickets or log scale books), the numbers of these trucks working under each contract, percentage of production completed, the number of working days consumed, the date and volume of scale reports, and the date bills are paid. When volumes are listed in reports of availabilities by logging units or cutting units, the records will also reflect the daily production harvested by logging units or cutting units. These records will be used when preparing the periodic Report of Timber Harvested, which is the basis for billings. The exception to daily posting is pulpwood contracts where volumes are determined from consumer mill tally tickets, and sawtimber contracts where log scale volumes are summarized daily in scale books.

i. Scale books. The timber scale book must be used to record volumes of sawtimber, poles, piling, or posts harvested under individual contracts. It will be used when the sale is under the scale method or during the test run under weight sales. Timber scale books are the permanent record of harvested timber and will be handled and safeguarded by all employees accordingly. Before using the timber scale book, complete the title block on the outside cover and stamp the following on the inside cover:

IF LOST, PLEASE RETURN TO:

_____, Authorized Representative
(Name)
_____, _____, _____, _____
(Reservation) (City) (State) (Zip)
_____, _____, _____, _____
(Telephone Number) (City) (State) (Zip)

Entries must be legible and accurate. Individual pages of scale books will be totaled by the scaler; however, the columns "Volume Brought Forward" and "Volume to Date" will not be totaled. It is suggested that a 60-day supply of pages be kept at the field office. The scale books will be numbered at the District office and accountability will be based on this number; therefore, a record book will be kept by the Authorized Representative and the date and to whom each book is issued will be recorded. After use, the date the book is returned to the District office will be indicated in the record book. As a further accountability measure, the Authorized Representative, when receiving scale books, should initial by the book number to indicate the number is in the correct sequence.

ii. Weight tickets. The U.S. Government Weight Ticket, or any other approved weight ticket, is prescribed for recording the volumes of timber or timber products harvested under the weight sale method. These tickets become the permanent record of timber or timber products harvested under individual contracts and should be safeguarded as such. Entries must be legible and accurate. Particular emphasis should be placed on the legibility of gross, tare, and net weights. When mistakes are made, a new ticket must be filled out, the old one marked "Void," and the "Void" ticket initialed by the person who made the mistake. This "Void" ticket is sent in with other tickets at billing time. Weight tickets will be issued upon requisition from the Stock Section of the District office; however, they will be accounted for at all times by individual ticket numbers. A record book should be maintained by the Authorized Representative to account for tickets received, used, and returned to the District office.

iii. Consumer mill tally tickets. When a contract specifies that pulpwood or stumpwood be measured at the consumer mill, consumer mill tally tickets for pulpwood and consumer weight tickets for stumpwood will be accepted as a record of the harvested timber product under the respective sale contracts. Each such ticket will show the following information in addition to the cubic feet or weight measurement, gross volumes, deductions with reasons therefor, and net cords or weight volumes:

Reservation number

Contract number

Product number

Truck number

Driver initials

Date

Time

Metal security seal numbers

Weigher's initials

Purchasers will transmit consumer mill tally tickets or weight tickets to the Authorized Representative under cover of a letter indicating the net volume harvested during the period for which the consumer mill tally tickets are being submitted. When shipments to the consumer mill are by rail, copies of bills of lading will also be submitted under cover of this letter. (The freight agent will identify all bills of lading for wood as "Government Wood" at the time of shipment.) This letter, with

mill tally tickets and bills of lading, will accompany the billing reports submitted to the District office. When scaling of pulpwood is done at the dealer's yard, the ticket prepared by the yard scaler will be secured as a check on wood received at the consumer mill. Each day, the scaler at the yard will mail such tickets, using metal security seals, to the Authorized Representative. Deductions due to angled or biased wood, poorly trimmed or knotty wood, and short or long wood, will not be allowed; consumer mill tally tickets will be appropriately changed or corrected at the field office before transmittal to the District office. The Authorized Representative will indicate his approval of all questionable deductions shown on the tickets by placing a green pencil check mark opposite the deductions.

iv. Billing procedure. On the first of each month the Authorized or Designated Representative will check the accuracy of volumes harvested by comparing the tickets and weights against the tickets held at the project or District office. After making certain that the volumes listed as harvested during the previous month are accurate, a certification will be made by the responsible employee in the following suggested format:

CERTIFICATE OF TIMBER HARVESTED

Routing
1. _____ Installation _____ Period _____
2. _____ Report No. _____ From _____ To _____
Date _____

This will certify that figures as shown have been reviewed and reflect the volume of products harvested on this contract during the period indicated.

Signature _____

One copy is forwarded to the District office for billing by Finance and Accounting, and one copy is retained for each official individual contract file. On final reports, the word FINAL will be typed/printed in capital letters, after the report number. The "Volume to Be Harvested" and the "Value of Timber to Be Harvested" columns will remain blank. The Finance and Accounting Branch will prepare a bill on Standard Form 1114, Bill for Collection, and submit the original copy directly to the purchaser with a suspense copy (blue copy) to the Authorized Representative.

v. Collection of bills. To help in the prompt collection of bills, the following wording will be placed on each Standard Form 1114, Bill for Collection, by the Finance and Accounting Branch:

Payment in full, including advance payment, must be received by the Authorized Representative, _____

(Installation)

Timber Harvesting Project, Box _____,

(City)

_____, on or before _____,

(State & Zip Code)

(Date)

19 __, or field operations may be suspended by the Government without advance notice. PROMPT PAYMENT OF THIS BILL IS ESSENTIAL.

Payment will be in the form of a cashier's or certified check, or postal money order. Cash will not be accepted at the field level; if it is tendered, the purchaser will be requested to secure the proper form of payment. As a followup, a suspense copy (pink copy) of Standard Form 1114 will be held by the District office and, if payment is not received within five (5) calendar days as indicated on the bill, the Authorized Representative will be notified to request immediate payment from the purchaser. If payment is not promptly received, all operations under the respective contract should be suspended until payment is received. Once payment is received, the District office should be immediately notified. It also is suggested that a simple card system be established in the project office on each sale contract indicating:

Contract number

Bill number

Amount of bill

Date of bill

Date bill received

Deadline date for payment of bill

Date of collection by Authorized Representative

Date of payment sent to Finance and Accounting Branch

This card system will show any outstanding bills and actions necessary by the Authorized Representative. Authorized Representatives must request advance payments by letter; they must also collect advance payments from the purchaser whenever the purchaser harvests more volume than is covered by monies on hand.

vi. Contract completion dates. Two methods are used to designate the contract term or completion date: the specific date by day of the month and year method and the "working day" method. The first method establishes a definite completion date; under the second method, the completion date is determined by the number of working days which are available for harvesting under the criteria described below. The definite completion date method will be used in most instances. The "working day" method will be used only in an unusual situation, since it requires that detailed information be used to determine whether a day should be charged as a work day or not. To support the determination of working days, the Authorized Representative will keep a daily log showing the following information:

1. Whether the purchaser worked all or part of the day.
2. Whether weather or logging conditions prevented harvesting.
3. Whether weather and/or logging conditions were favorable and purchaser did not work, and reasons for not harvesting, if known.
4. Whether the purchaser had enough area available to work and to accomplish an average day's work (if there is doubt as to whether the day was suitable for harvesting in the entire sale area, indicate portions of the sale area where purchaser could have worked). If purchaser was kept out of area because of slow progress of another (sawtimber) purchaser, this must be noted.
5. Name of the Government employee who visited the site during the day and made the above observations.
6. Where it may be important, names of subcontractors who may have worked in the area.

It is very important to maintain accurate information as justification and for the Government's protection in the event a purchaser may question decisions on working days. Compute working days to nearest half day. For example, if forenoon of a day is not considered to be available for harvesting, consider the entire day a nonworking day since purchaser could not be expected to work in an afternoon. Further, if the purchaser worked more than half a day and was stopped by rain, military missions, etc., consider this a half working day. Where military missions interrupt harvesting operations, the purchaser is required to harvest when the area is open for five (5) or more consecutive week days (exclusive of Saturdays and Sundays). Work days will not be charged between military interruptions unless there are five (5) consecutive week days open for harvesting. In the event firing and/or military missions prevent harvesting on a portion of a sale area, but work can progress on the remaining area, work days will be charged, provided the purchaser has a sufficient area to complete minimum daily production. The period between the date of notice to proceed and time work is to

begin, as stated in the timber sale contract, is for mobilization and is not considered to be working days. Working days are not charged if the purchaser works on days and under field conditions which are so bad that the day would ordinarily not have been considered a working day. If there are other delays which are beyond the control of the purchaser caused by factors other than weather or military missions, the Contracting Officer may, at his sole discretion, return the lost time (not to exceed the working days actually lost) based on his investigations and such supporting evidence as may be provided him by the purchaser and by the Authorized Representative. If additional days are authorized by the Contracting Officer to be returned to the purchaser, these days should be held in reserve until the latter part of the contract period. Only the number of days needed to complete the work should be returned to the purchaser. If ground conditions are satisfactory, working days will be charged where the Government must close down the purchaser's operations for other than convenience of the Government. The District office will clarify questions on working days. Saturdays, Sundays, and Government holidays are not considered working days. The daily log will fully justify the working day determination.

vii. Progress maps. A map or mosaic of the entire installation on which cutting areas and/or logging units are shown will be maintained for control purposes in the project office. The map or mosaic should be covered with a transparent plastic material so the cutting progress of each contract can be indicated with grease pencil. Areas satisfactorily cut over will be cross-matched with appropriate colors showing particular types of timber or timber product harvested. Progress will be posted daily.

viii. Project cost charts. Project Costs -- Timber Sales Contracts (Attachment H) should be used to prepare cost data in relation to revenue receipts for periodic review and manpower-requirements analysis by representatives from higher authority. This chart will be prepared by the Authorized Representative using the graph method on a fiscal year basis. It will show the estimated value of all forest products to be harvested during the period, the projected project costs as determined by the fiscal year budget for the respective project, and the cost-income ratio. Actual income from harvested volumes, project costs, and the cost-income ratio will be furnished quarterly by the District office on or about the 23rd of the month following posting by the Authorized Representative. Charts should be kept current.

ix. Contract closure. When all sawtimber and pulpwood are removed from one or a small group of logging units, the Authorized and Installation Representatives will inspect the area. This will be done progressively throughout the available area. The Authorized Representative will obtain a satisfactory informal clearance from the Installation Representative. When the sawtimber contractor has completed all logging units, the Authorized Representative will inspect the remaining logging units, or those not previously inspected with the Installation

Representative, and submit a satisfactory "memorandum of clearance" on the sawtimber contract to the District office. This memorandum will justify closing out the sawtimber contract. As the pulpwood is harvested, the Authorized and Installation Representatives will inspect the remaining logging units as they are completed. A satisfactory "letter of clearance" from the installation will then be obtained for the entire available area. This letter should state only that the timber made available was removed satisfactorily. This method allows both the installation and District to note the progress of harvesting without duplicating inspection trips. The installation clearance letter will be forwarded through the Authorized Representative to the District office. If any timber made available is still unharvested, its acreage and location, volume, species, and the reasons why it was not removed will be reported.

x. Lost time chart. A Contract Lost Time Chart should be kept for contracts which specify definite completion days instead of working days. This chart should be accurate since it is the supporting data for the extensions.

(2) Modifications to Contract. A written modification, either in the form of a supplemental agreement or change order, is required when there is any change in the contract terms or specifications. Any contract modification which requires mutual action by both parties or requires the mutual consent of the Government and the purchaser (i.e., an increase in volume or area or change in use standards), must be accomplished through a Supplemental Agreement. Any change which can, under the Contracting Officer, as set forth by the terms of the contract, be directed by issuing a written order from the Contracting Officer without the consent of the Purchaser will be accomplished by a Change Order. All required changes are handled by the District office. On contracts in which a completion has been established and where the purchaser has a justifiable need for additional time, the Authorized Representative may request added time on the suggested form (Attachment J) at least ten (10) calendar days in advance of the completion date (including the complete justification for the request).

(3) Processing Liquidated Damages. When violations of contractual terms are detected for which liquidated damages are established under the contract, the number and diameter of trees involved, the circumstances surrounding the violation (whether it was willful, through carelessness or negligence), and other pertinent information will be forwarded to the District office by memorandum with the recommendation of the Authorized Representative. A decision on each violation will be given by the Contracting Officer and, if liquidated damages are involved, the purchaser will be charged according to the terms of the contract. Information on the Contracting Officer's decision will be promptly furnished to the purchaser, the Finance and Accounting Branch, and the Authorized Representative.

c. Field operations (including technical functions). Effective contract administration is necessary for an orderly, well-planned, and properly supervised and inspected field operation. Such field operations, in turn, create good relations with the purchasers and tend to generate interest in new timber invitations. New timber invitations should always be in strict compliance with the terms and conditions of the sale contract and the procedures described in these guidelines. Government personnel should deal firmly, but courteously, with the purchaser and his personnel.

1. Scaling.

(a) Place of scaling or measurement. Timber scaling will always be at a location/area(s) free from hazardous conditions. Except for a test scale under weight sales, scaling locations/area(s) will not be near trucks loading logs, or near skidding or felling operations. During test scales, every precaution will be taken by the scaler to prevent accidents; this is done by carefully instructing purchaser personnel about the operation. Scalers should always be in complete control of the operation. When working around logging equipment, scalers will wear prescribed safety equipment.

(b) Scaling methods and/or measurement.

(1) Sawtimber. Sawtimber will be scaled under the Scribner Decimal C Log Rule according to instructions and criteria in the National Forest Scaling Handbook as modified or interpreted in these guidelines and such other instructions as may be specifically issued from time to time by the District office.

(2) Poles and piling. Poles and piling will be scaled according to ASTM Standard Specifications, with an extra allowance of 1/4 in. in diameter for machine peeling on both butt and top ends. To insure accurate measurement, the lower 6 ft and the upper 2 ft of a piece will be clean-peeled. All pieces will be numbered with crayon or stencil pencil on the butt end and/or on the side of the butt end stamped on the small end. Pieces will be classed as they are measured. The class and length will be recorded in the timber scale book. (Circumference measurements may be recorded to help determine class.)

(3) Posts. Posts will be stacked so that they can be counted by the piece, marked (not numbered) with crayon on one end, and stamped with a hammer marked "US" on the other end. Posts will be tallied by size classification and recorded by size classification in the timber scale book. On larger sales, posts can be sold by weight, rather than individually.

(4) Pulpwood and/or stumpwood. Pulpwood and/or stumpwood volumes will be determined by measuring their weights at Government-operated weight scales or at approved consumer scales. Mill tallies or

measurements performed by Government personnel will be used when the weight scales are not readily available.

(5) Miscellaneous forest products. Specific instructions will be issued under the Special Terms and Conditions of the timber sale invitation.

(c) Merchantability standards and deductions for defects. Merchantability standards are governed by the terms and conditions of the sale as outlined in the National Forest Log Scaling Handbook.

(1) Deductions for defects. Deductions for defects, cull logs, and trim allowances will be made according to the rules and guidelines in the National Forest Log Scaling Handbook. Copies of the current National Forest Log Scaling Handbook should be given to all those concerned with the measurement of forest products harvested on military projects.

(2) Check scaling. Check scaling will be done periodically by both the Authorized Representative and the District Office Forester(s). Check scales are made to see that all standard techniques of scaling are being followed; they are particularly important on weight scales and during the scaling of sample areas. On sales by log scale, and during scaling operations on weight sales, the Authorized Representative will check scale from 50 to 75 logs on at least one scaler every two (2) weeks and submit the check scale with the billing report for that period. This duty will not be delegated to assistants or subordinates. A different scaler will be check scaled each time. The check scale report will then be summarized and submitted for analysis to the District office. Check scale data will be collected in the field by standard methods. The District Office Forester will make unscheduled formal check scales on scalers (175 to 250 logs, minimum). Only logs whose numbers are clearly legible will be checked. Log lengths and diameters will be measured with a scale stick. Logs should lie so all sides can be viewed for defects. Notes on the types and dimensions of defects in certain logs should be recorded in the field. These data should be tabulated with original scale data obtained from the scale book. A square will be drawn around lengths or diameters of the original scale which are less than the check; a circle will be drawn around lengths or diameters of the original scale which are more than the check. Observations and recommendations for remedying deficiencies will be made on check scale summary sheets. If applicable, information on the defectiveness of log samples as compared to those on the sale as a whole, and to the number of logs scaled as it affects the significance or reliability of the data, will be indicated. It will be the responsibility of the Authorized Representative and the individuals concerned to see that the deficiencies are corrected. A subsequent, formal check scale should be made if the deficiencies are serious.

2. Weighing.

(a) Government weighing. Forest products sold under the unit weight method should be weighed when the workload justifies using Government weight scales and personnel.

(b) Commercial weighing. Approved weight scales may be used in measuring forest products on the unit ton basis when Government-operated scales are not available, or their use is not feasible. Justification and analysis of commercial scales which are recommended may be approved on the suggested form in Attachment AA.

Scalers must scale according to the National Forest Scaling Handbook. Accuracy must be within these limits: on log groups with 10 percent defect, check scale must be within ± 2 percent, and with 11 to 20 percent defect, within ± 3 percent.

(c) Selection of sample areas on weight sale areas. Sample areas from which timber is to be scaled and weighed will be selected after a thorough examination of the entire sale area. Variations in weight caused by species, amount of defect, tree maturity, and tree (and log) size should be considered when selecting sample areas. However, average log size and tree maturity must be given primary consideration. Areas of mature or old growth timber must be mapped and reported and a separate sample taken of the usual second-growth timber (select a sample area that contains more timber than is required in the sample test run volume).

(d) Determining the weight factor on weight sales. On sawtimber sales, the weight factor will be determined by dividing the gross weight by the net volume scaled, and on pulpwood sales sold by standard cord, weight is determined by dividing the gross weight by the consumer mill tally net volume.

3. Metal contamination in logs, trees, or stands of timber. When military metal is in logs or in stands of timber, all logs/stands will be checked under the supervision of the Authorized Representative. A mine detector will be used to determine the degree of contamination. Problems involving metal in trees should be handled and solved as quickly as possible to prevent wood deterioration. The purchaser should be informed of the procedures required under the terms of the sale contract. If the purchaser makes a formal, written request for relief and if the contamination is determined at field level to be excessive, the Authorized Representative will immediately tell the District office about the volume, species, quality, acreage, and location of the contaminated trees. The Authorized Representative will also detail the Government's investigations into the matter. The formal decision as to whether the timber is too contaminated to harvest will be made by the District office and will be based on information furnished by, and discussions with, the Authorized Representative. Depending upon the degree

of contamination and the decision of the Contracting Officer, such timber or timbered area will be either set aside for disposal as "contaminated timber" by designating the boundaries of the area(s) with trees marked with paint, or the purchaser will be required to complete the harvesting. Extreme caution will be exercised to see that pulpwood purchasers do not ship wood containing damaging metal. In many cases, wood can be searched, the metal removed, and then shipped to the pulp mill. Based on numerous test cases, timber containing an occasional 30-calibre bullet is generally not considered to be a problem for either sawmills or pulpwood mills. Bullets are not considered damaging unless they contain a solid steel center (e.g., 50-calibre). Government-owned metal detectors can be used by the purchaser, but their use must be closely supervised by the Authorized Representative. Authorized Representatives will demonstrate the use of metal detectors under field conditions and help in training the purchaser's personnel. The Authorized Representatives should issue a hand receipt to the purchasers for the detectors, and such receipts should clearly state the above requirements and that, in event of loss or damage through carelessness, the detectors will be paid for in full. Excessive military metal in logs will be scaled in accordance with the Deductions for Defect paragraph.

4. Woods operations and inspections. The Authorized Representative must, through assigned technical personnel and frequent personal reviews and inspections of field activities, follow all phases of woods operations throughout the contract period to obtain maximum results from operational planning. Detailed instructions about the special requirements of the respective contracts and requirements unique to the particular installation or operational area must be given to the purchaser. Assignments and instructions to inspectors must be clear, and given enough in advance to permit the inspector to plan his work. Where possible, inspectors should be responsible for daily inspections of all phases of woods operations from the beginning to the completion of a contract. Initially, the inspector should learn the network of roads and trails, and, time permitting, should walk over and make a limited examination of the entire operational area before cutting operations begin. This will allow the inspector to control the purchaser's cutting operations progressively through the area. The inspector of a designated contract will always keep a copy of the contract and progress maps with him in the field for ready reference. The Authorized Representative will inspect all field operational areas as often as necessary, but not less than once a week. He should give particular attention to the amount of equipment and personnel being used by the purchaser; methods and manner of timber felling, removal, scaling, and/or measurement; the condition of mill sites and roads; security measures; and whether progress within the sale area logging units is proper and production is adequate to complete the contract on schedule. He should also question the inspector to insure that all instructions issued and requirements of the contract are understood. Cut-over areas will be inspected and approved as the contract progresses and as field work is completed in a given logging or cutting unit. Inspections by

installation foresters, and FORSCOM, TRADOC, or DARCOM foresters should always be made in company of the Authorized Representative (The Authorized Representative must take the initiative to see that this requirement is met.) Inspection results will be reviewed and discussed with the Authorized Representative, and a copy of the report left at the field office after the inspection is finished.

5. Deficiencies and violations. Deficiencies or violations noted during the daily inspection of the purchaser's operations may be recorded on the Contract Inspection Report (Attachment Z). They should immediately be brought to the attention of the purchaser's field superintendent. The purchaser's field superintendent should be directed to correct these deficiencies or violations before the second copy of the report form is delivered to the contractor. After the day's work, all deficiencies or violations will be noted in the Monthly Contract Inspection Report as suggested in Attachment Z, and reported to the Authorized Representative. At no time will the inspector give instructions about deficiencies or violations to other than the purchaser or his field superintendent. The exception is when deficiencies or violations are such that immediate remedial action is necessary. The Authorized Representative will personally check all contract violations. The Authorized Representative will inform the purchaser in a concise, courteous letter of any major repeated violations. This letter will also tell the purchaser how to correct the violation(s). Violations will not be discussed with subcontractors or their employees unless they are of such a nature that immediate remedial action is necessary. The District office will be told of all major or repeated violations and a recommendation made for invoking penalties.

6. Fire and installation regulations. Fire and installation regulations will be enforced by the Authorized Representative. Copies of regulations will be made available to the contractor upon request. All fires on the contract area, whatever their cause, will be reported to the District office within five (5) days. This report will include:

- (a) Location, with map, showing area burned
- (b) Acreage burned
- (c) Action taken by installation authorities, giving exact time fire was reported, suppression began, and fire put out
- (d) Action of purchaser or subcontractor in suppression, giving names, addresses, etc.
- (e) Details of the fire, i.e., how it started; results of interviews with the person(s) who saw the fire start, or who saw the conditions leading up to the fire

The Authorized Representative will visit the fire/fire site, and if possible, attach a copy of the Installation Forester's fire report and his concurrence of the estimate of loss in terms of board footage, cordage, number of trees, etc., to his site report.

7. Timber harvesting contract inspection reports. Forestry technicians will keep a daily Timber Harvesting Contract Inspection Report (Attachment Z) on each contract for which they are responsible, including each day's inspection activities. This report will be reviewed each day by the Authorized Representative or his assistant. The report will be dated and initialed by the person making the review. Since the report is a permanent record while a contract is in force, it will be filed at the project office and will be available in the event the information is needed to settle any contract dispute.

d. Security and protection of Government property -- forestry products. Security of forest products is necessary if the amount of timber products removed from a reservation is to be accurately determined. Good security not only protects Government property, but reflects the integrity of the Government employees engaged in timber sales. Authorized Representatives are responsible for security at the field level. The following are security guidelines:

1. Security inspections. During normal working hours and on a daily basis, employees will check trucks, sale areas, mill sites, yards, and loading points as part of their regular duties. Employees will examine logs for standard identification, and check trucks to see that they are properly numbered and that binder chains and seals are affixed properly. They will also check truck movements to see that routes designated by the Authorized Representative are followed. These inspections will be recorded in longhand in the field on the suggested daily inspection security form (Attachment K). Authorized Representatives will have inspections made as necessary on nonduty days to determine if forest products are being harvested on other than working days. Sufficient security inspections will be made during other than normal working hours to assure the Authorized Representative that no unauthorized activities are taking place.

2. Working hours. The Authorized Representative will arrange employees' working hours to insure that enough personnel are always present when purchasers are authorized to work. To change an employee's working hours, the Authorized Representative must notify the District office. The District office will then tell the employee of the change at least 48 hours in advance. Working hours vary at the installations because of differences in the customs of the purchasers, labor, and other conditions. At no time will purchasers be allowed to remove timber from the installation when Government inspectors are not on duty. Under special conditions coordinated with the Authorized Representative, purchasers may cut and bunch timber and work on equipment in the woods when Government inspectors are not on duty. When timber sold by weight

is to be weighed on Government scales, no loaded truck will be permitted to leave the contract area before the scales open, nor will any truck be loaded in the evening which cannot reach the weigh station before closing. Trucks loaded in the evening that cannot reach the weigh station before closing because of some type of emergency may be parked at the weigh station overnight. The Weighmaster will be told before closing time if a truck cannot reach the weigh station and on-the-spot arrangements will be made by the Weighmaster in each case.

3. Truck identification and equipment. All trucks removing timber products will be required to conform to all installation regulations concerning motor vehicles. All trucks will be identified by a removable metal tag or bumper sticker marked on the front with stick-on letters or numbers. The abbreviation of the reservation will be on the right-hand side (Fort Stewart -- FS); the purchaser's last initial (Jones -- J) and the number assigned the truck will be on the left-hand side. Each truck will be issued a Timber Harvesting Authorization Card (see suggested form, Attachment Y) by the Authorized Representative or his appointed representative. The person signing the card will then notify the forestry technician in charge of the contract and the Weighmaster at the weigh station so they can make a change of contract. In the event commercial scales are being used, the person issuing the card will notify both the forestry technician in charge of the contract and the Weighmaster at commercial scales so records can be changed. The truck driver will always keep the card in the truck for inspection purposes. The driver will present the card to the Weighmaster at the Government or commercial scales when being weighed. In the interest of highway safety, reflectors should be placed on the rear of all logging and pulpwood trucks, and each truck must carry flares. All binder chains on pulpwood trucks will be affixed to the vehicle according to specifications attached to the main frame (see suggested letter in Attachment L). This letter is suggested for issue to new pulpwood purchasers and for periodic issue to all pulpwood purchasers.

4. Metal seals. As a measure of protection and accountability, metal seals will be used on all trucks removing timber products, with the exception of sawtimber sold entirely by log scale or timber sold by lump sum. Seals will be kept under lock and key at project level.

(a) Weight sales.

(1) Government weight sales. When the contract starts and tare weights are established on each truck that is going to haul wood from a particular contract, one seal will be issued to each truck at the same time the truck authorization is issued. This will authorize a truck to go to the woods, load the wood, place the seal on the binder chain as prescribed, and return to the Government weigh station. The Weighmaster will mark the ends of at least four pieces of the product with paint and brand with a U.S. hammer, remove the seal from the load, record the number on the weight ticket, weigh the truck and complete the weight

ticket, and issue a new seal to the truck driver which will authorize him to remove another load of wood from the contract area. The new seal number will be recorded in a bound ledger and the old seal will be checked off the ledger and put with the weight ticket in a box provided by the Authorized Representative. When a truck is moved from the reservation by the purchaser, the Authorized Representative will require the return of all unused seals.

(2) Non-Government weight sales. Seals for sales where non-Government weight scales will be individually issued by the Weighmaster for subsequent loads. These seal numbers will be recorded in a register and signed for by the purchaser's representative. When the used seals are returned to the office, they will be checked off the register. All seals issued each week must be accounted for before the issue of seals to the purchaser for the next week. If there are seals that are not accounted for and no satisfactory explanation can be made by the purchaser, the Authorized Representative will inform the Contracting Officer. The Contracting Officer will take appropriate action to see that the purchaser corrects the deficiency and that it does not occur in the future. A seal will be placed on the binder chain of each load of timber products before the load leaves the contract area. On arrival at the commercial weigh station, the Weighmaster will mark the ends of at least four pieces of the product with paint and brand them with a U.S. hammer, remove the seal, record the seal number on the weight ticket, complete the weighing procedure, and deposit the ticket and seal in a self-addressed envelope provided by the Authorized Representative. The Weighmaster will mail the seals and tickets to the Authorized Representative daily. (The Authorized Representative will furnish the commercial weigh station with a supply of addressed envelopes.) When the tickets and seals are received by the Authorized Representative, the seals and the tickets will be checked off the register and put in a locked cabinet until billing time.

(b) Seals for nonweight sales. Seals for nonweight sales will be issued weekly, recorded in a bound ledger, and signed for by the purchaser's representative, as outlined above. A seal will be attached to each load of wood before it leaves the contract area and will be deposited, with a copy of the load ticket issued by the woodyard, in a seal box provided by the Authorized Representative at the unloading point. Accumulated seals will be picked up at billing time by a Government employee and counted and recorded to substantiate and approximate the amount of wood shipped during the period. Where wood is shipped from railroad sidings, the Authorized Representative will obtain the bills of lading from railroad freight agents on a daily basis as cars are loaded and shipped. The Authorized Representative will place contract numbers on the bills of lading and file them until the purchaser submits his copies of the bills of lading and mill tally tickets, at which time the Authorized Representative will check all the cars shipped from this loading point. Where wood is hauled to a commercial woodyard or plant yard, seals will be deposited in a box provided by the Authorized

Representative in the woodyard office by the woodyard representative, and a copy of the woodyard ticket will be placed in the box at the same time. Wood hauled to private woodyards will be handled in the same way but close supervision is necessary to see that all trucks leaving the contract area have seals properly attached to the binder chains and that copies of all tickets are placed in the seal box.

5. Identification of pulpwood on private woodyards. When the wood is handled through private woodyards for shipment by rail to the consumer mill, on nonweight sales of pulpwood, extreme caution will be used to provide maximum protection and security. Wood from Government installations will be stockpiled separately from other wood received at the yard. The stockpile area will be as far as possible from the loading point. Wood will be bundled and will be plainly marked with signs or tags to indicate contract number and that the wood is "Government Wood." The Authorized Representative will check frequently to insure compliance. District inspectors will also review this operation periodically. If, at the completion of the contract, there is not enough wood for a full carload, the wood will be measured by the Authorized Representative and the measurements and volume submitted on the final billing.

6. Identification of pulpwood on railroad sidings. Where wood is loaded at sidings, on nonweight sales of pulpwood, proper protection and security will be provided by the Government. All railroad cars on which Government wood is being loaded will be tagged with "Government Wood" signs by the purchaser. Signs should be either plywood or cardboard and about 1 ft x 2 ft x 1/2 in.

7. Lump sum sales. Seals will be used on lump sum sales only when they are in conflict with a unit price sale. Ordinarily a lump sum sale on a military reservation will require seals, because unit price sales are also in operation.

e. Aids in contract administration. The Authorized Representative should:

1. Recognize that timber contracts are legal documents that require compliance with all terms and conditions; not arbitrate or alter contract specifications to obtain a higher value for the Government timber or for any other reason; always recommend modification to the invitation or contract to the District office.

2. Induce compliance through an effective application of education and cooperation rather than through the exercise of police power. (Basically, this amounts to good human relations. The Authorized Representative can make people do things, or can make people want to do things.)

3. Take care to avoid promising a purchaser something, and then doing the opposite.

4. Consult the purchaser for advice. A purchaser will become more cooperative when the Authorized Representative indicates his interest in the purchaser's views and respects his judgment. Ask the purchaser questions in order to get a point across.

5. Approach the purchaser properly; each requires a different approach. Some are sensitive, others require planned approaches. If a purchaser has done good work, let him know about it. Praise his work honestly.

6. Be firm, fair, and impartial with all operators. Discuss problems quietly, but confidently. An Authorized Representative with a reputation of firmness will command more respect and cooperation than one the operators feel they can take advantage of or sway.

7. Avoid "bluffing" or the implication that the Authorized Representative knows more about the problem than he actually does. This type of insincerity is temporary and can lead to later embarrassment. Conversely, if the Authorized Representative errs in judgment, he should admit it.

8. Recognize the importance of timing. The crucial times in the life of a contract are the precontract conference with the purchaser to discuss terms and at the start of the different phases of the operation. Followups at the beginning of each significant phase of operation will get work off to the proper start.

9. Keep informed. Require employees to report their field activities on each sale. Require "planned" timber removal from sale areas; ask the subcontractors about their activities; an Authorized Representative cannot make intelligent discussions without knowing the facts.

10. Anticipate problems. The Authorized Representative can minimize his problems by anticipating likely areas of trouble before it is too late. He must try to anticipate problems that may arise from changes in operator personnel, equipment breakdowns, weather changes, reduced quotas, and changes in market conditions.

11. Use time efficiently. The Authorized Representative must plan the use of his time, and take advantage of systems that permit efficiency. For example, he should try to do more than one job on a required visit and to plan in advance what must be done at each inspection stop. He should not spread his time too thinly. He should make use of notes and reminders. He should try to inspect operations in company with the woods superintendent (this will save time later).

12. The Authorized Representative should recognize that work is judged on the results, not efforts. He should be interested in the job and acquire knowledge and experience as a basis for promotion to higher assignments.

13. Recognize need for improving techniques. New ideas and new methods are a necessity. The Authorized Representative should submit to the discipline of present policies in day-to-day jobs, but he should also be exploring means of improvement. He should not be discouraged if an idea is rejected at first; it may later be adopted. Suggestions give evidence of an interest in improvements.

11. Auditing of Scale and Measurement Records. Scale books will be used when scaling logs to determine weight factors. The Scribner Decimal C Log Rule will be used. Loads of logs will be kept separate in the book and will be clearly identified. The gross weight of the load will be entered in the book with the load and will be used to determine and check weight factors.

a. Pulpwood Records. At the field office, the Authorized Representative will examine each mill tally ticket to determine if the deductions are satisfactory, i.e., not the fault of the purchaser. If the deduction is approved as shown, the Authorized Representative will place a green checkmark in the deduction space; if it is not approved, he will indicate the corrected volume. The District office will check each ticket to see that corrections have been properly made. Mill tally tickets issued by pulpwood companies will periodically be audited to determine the accuracy of the conversion to net cords. Where pulpwood enters woodyards other than those owned and operated by pulp company employees, both truck tickets and mill tally tickets will be audited and compared. Although the mill tally is official, the difference should be noted: it should be no more than 2 percent. The District office will compare bills of lading, car numbers, and mill tally car numbers to see that they are the same. Tickets, documents, etc., reviewed by the District office will be checked with a distinguishing mark.

b. Weight Tickets. On weight tickets, all new weights will be audited by the District office by subtracting the tare from the gross. Where tare weights are predetermined and established, tare weights on tickets will be compared with predetermined tare weights. Tickets will also be checked to see that all necessary information has been recorded by the weighing agent. Field offices will be advised of discrepancies.

c. Check and Record Scale Book Numbers. As a part of security, the District office will check and record scale book numbers, and Government weight ticket numbers issued to each field office, to see that proper accounting is made of those previously issued to field offices.

12. Timber Cruising, Estimating, and Evaluating.

a. Field Office Procedure. Timber harvesting personnel will use the appropriate volume tables for the forest products being sold.

b. Sampling of Pole and Pile Areas.

1. Certain areas within availabilities may be designated as the areas from which special products can be harvested, such as poles and piles, and should be advertised as such.

2. By use of one-quarter- or one-fifth-acre plots, or point sampling technique, a cruise will be made of the "special area." The intensity of the inventory will be determined by the value of the forest product involved and degree of accuracy required by standards or guidelines. The inventory will be accomplished by trained and qualified forestry technicians or by professional foresters.

c. Steps in Sampling Pole and Pile Areas.

1. Obtain serial mosaic of area and indicate timbered area boundaries.

2. Obtain timbered acreage by dot grid system or planimeter and indicate method used.

3. Locate lines and plot locations on the aerial mosaic to determine if enough plots are to be taken; do not use personal judgment in placing either lines or plots.

4. Take one-fifth acre plots, tallying all trees 6 in. dbh and larger and dividing them into four separate tallies.

(a) Pulpwood trees which will make poles and piles are tallied by class and/or length on suggested form Attachment M.

(b) Pulpwood trees which will not make poles and piles are tallied on suggested form Attachment N.

(c) Sawtimber trees which will make poles and piles are tallied by class and length on suggested form Attachment M.

(d) Sawtimber trees which will not make poles are tallied on suggested form Attachment N.

5. Compute and summarize sample volumes on the appropriate forms suggested in Attachment N.

13. Systematic Point Sample Method.

a. On tracts containing 100 acres or more, the point sample method may be used instead of the line plot method to estimate the volume of timber products.

b. Format.

1. The number of points to be cruised on a given area will be determined by the following formula:

$$N = \frac{TCV}{A}$$

where:

- N = Number of points required for accuracy
- T = Students T Value
- A = Desired accuracy in percent of total volume
- CV = Coefficient of variation of the area

Coefficient of variation (CV) is defined as the ratio of the standard deviation to the mean of the population. The lower the CV, the less variable the population. The CV is directly related to the number of samples that must be taken and should be as accurate as possible. The CV of the sample, and consequently the number of samples needed, can be greatly reduced by delineating permanently nonstocked or nonproductive areas such as roads, open fields, lakes, rivers, etc. The net forest acreage to be sampled can then be determined by subtracting the acreage in such an area from the total land area. Sampling can also be more efficient if similar areas can be stratified and sampled separately.

2. Individual points should be cruised with an appropriate Basal Area Factor prism.

3. Volume Tables.

(a) Sawtimber Tables for Estimating Board Foot Volume of Timber, U.S.D.A. Forest Service, Scribner Log Rule.

(b) Pulpwood: Attachments W and X, Tables 16 and 17.

(c) Basal Areas and Plots per Acre: Attachment BB

ATTACHMENT A

SALE OF GOVERNMENT FOREST PRODUCTS INSTRUCTIONS TO BIDDERS

INVITATION FOR BIDS NO.

PAGE

1. KNOWLEDGE OF SALE TERMS AND CONDITIONS.

All bids submitted shall be deemed to have been made with full knowledge of all of the terms, conditions, and requirements herein contained. Any oral statement or representation by a representative of the Government, changing or supplementing any condition of this advertisement or contract resulting therefrom is unauthorized and shall confer no right upon the bidder or purchaser.

2. INSPECTION.

The bidders are invited, urged, and cautioned to inspect the property to be sold prior to submitting a bid. Property is available for inspection during the times and through arrangements made as specified on the cover sheet of this invitation. In no case will failure to inspect constitute grounds for the withdrawal of a bid after opening.

3. CONDITION OF PROPERTY.

The property is offered for sale "as is" and "where is" with the bidder being obligated and responsible to provide at his sole expense and without any cost whatsoever to the Government all labor, equipment, materials, and supplies required to harvest and remove the forest products involved. The description of the property is believed to be sufficiently specific for purposes of identification. Any error or omission in the description (including location) shall not constitute any ground or reason for non-performance of the contract or claim by the successful bidder for any allowance, refund or deduction from the amounts offered. The Government does not make any guarantee or warranty expressed or implied with respect to the property as to quantity, quality, character or condition, size or kind, or that the property is in condition or fit to be used for the purpose for which intended. The purchaser acknowledges that he has satisfied himself as to the location, field conditions, and volume of forest products to be removed from the designated area(s). This contract shall be construed to have the intent of covering all the designated forest products of the specified species and sizes on the area and as described hereto and shall include all such forest products whether less than, equal to, or in excess of the estimated volume or quantity stated.

4. PREPARATION AND SUBMITTAL OF BIDS.

a. **BID ITEMS.** Unless the invitation otherwise provides, bids may be submitted on any or all items; however, a bid covering any listed item must be submitted on the basis of the unit specified for that item and must cover the total number of units designated for that item. In case of error in the extension of prices, unit prices will govern.

b. **BID FORM.** Sealed bids must be executed and submitted on the bid form accompanying this invitation for bids, bid and acceptance, or on exact copies thereof. Bids shall be filled out in ink, indelible pencil, or typewriter, with all erasures, strike overs, and corrections initialed in ink or indelible pencil. Additional copies of the bid form may be obtained from the said District Engineer.

c. **EXECUTION OF BID.** A bid executed by an attorney or agent on behalf of the bidder must be accompanied by an authenticated copy of his Power of Attorney or other evidence of his authority to act on behalf of the bidder. If the bidder is a corporation, the Certificate of Corporate Bidder must be executed. If the bid is signed by the secretary of the corporation, the Certificate must be executed by some other officer of the corporation under the corporate seal. In lieu of the Certificate of Corporate Bidder, there may be attached to the bid a copy of so much of the records of the corporation as will show the official character and authority of the officer signing, duly certified by the secretary or assistant secretary, under the corporate seal, to be a true copy.

d. **MARKING AND ADDRESSING OF BID ENVELOPE.** The invitation number and bid-opening time must be plainly marked on the left side of the sealed envelope in which bids are submitted, for example:

Return Address

Sealed Bid

To be opened: TO: District Engineer
U.S. Army Engineer District, Savannah
ATTN: Real Estate Division
P. O. Box 888
Savannah, Georgia 31402

Date _____

Invitation No. _____

e. **DELIVERY OF BIDS.** It will be the duty of each bidder to see that his bid is delivered by the time and at the place prescribed in the invitation. Bids received prior to the time of opening will be securely kept, unopened. The person whose duty it is to open them will decide when the specified time has arrived, and no bid or modifications of a bid, or withdrawals of a bid received thereafter, will be considered, except those received before award is made, provided they are sent by registered mail or certified mail for which an official dated post office stamp (postmark) on the original Receipt for Certified Mail has been obtained and it is determined by the Contracting Officer that the late receipt was due solely to delay in the mails for which the bidder was not responsible or that the late receipt was due solely to mishandling by the Government after receipt at the address of the place designated for opening of bids. No responsibility will be attached for the premature opening of a bid not properly addressed and identified. All modifications of a bid or withdrawals of a bid must be in writing. Telegraphic bids will not be considered, but modifications or withdrawals, by telegraph, of bids already submitted will be considered, if received prior to the time set for opening bids.

5. BID DEPOSIT.

A bid deposit in the amount of not less than 10 percent of the total bid price or the total amount of the bid if the estimated total bid price is less than \$1,000 must accompany each bid. Such deposit must be furnished in cash; or postal, express, or bank money order; cashier's, certified, or traveler's check; or a combination thereof made payable to the order of the "Treasurer of the United States." The deposit of the successful bidder will be retained by the Government and applied against the payment of the forest product sold. The sale will be on an all-cash basis with other periodic payments required as hereinafter specified.

6. OPENING OF BIDS.

At the time fixed for the opening of bids, their contents will be made public by announcement for the information of bidders and others properly interested, who may be present, either in person or by representative; provided, however, that any information submitted in support thereof, the disclosure of which might tend to subject the person submitting it to a competitive business disadvantage, will upon request be held in strict confidence by the United States.

7. AWARD OF CONTRACT.

Award of contract will be made to that responsible bidder whose bid, conforming to the invitation for bids, is most advantageous to the Government, price and other factors considered. The Government may, when in its interest, reject any or all bids or waive any informality in bids received. The Government may accept any item or combination of items of a bid, unless precluded by the invitation for bids or the bidder includes in his bid a restrictive limitation.

SALE OF GOVERNMENT FOREST PRODUCTS GENERAL SALE TERMS AND CONDITIONS

INVITATION FOR BIDS NO.

PAGE

1. DEFINITIONS.

a. The term "Secretary" as used herein means the Secretary of the Army; and the term "his duly authorized representative" means the Chief of Engineers, Department of the Army, or an individual or board designated by him.

b. The term "Contracting Officer" as used herein means the person executing this contract on behalf of the Government and includes a duly appointed successor or authorized representative.

2. DEPOSITS.

a. **ANNUAL BID BOND.** In lieu of the required monetary bid deposit, an annual bid bond with surety approved by and in a form acceptable to the Government may be used, provided such bond is on file in the Office of the District Engineer prior to the time set for opening of bids and the penal sum thereof shall equal to 10% of the total amount of any individual bid made during the fiscal year of the bond. Additional deposit security will be required for any individual bid made during the fiscal year that exceeds ten (10) times the penal sum of the bond. Such additional deposit security shall be equal to 10% of the difference between individual bid amount and the maximum amount covered by this bond. Standard Form 151 may be used for this purpose.

b. **PERFORMANCE DEPOSIT OR BOND.** In addition to the payments required under other provisions of this contract, each successful bidder will, within fifteen (15) calendar days after notice of acceptance of his bid by the Contracting Officer, deliver to the Government a certified check, cashier's check, traveler's check, or postal money order, payable to the order of the "Treasurer of the United States," in an amount equal to 20% of the total contract price in order to insure faithful performance under this contract. If the contract is performed to the complete satisfaction of the Contracting Officer, said deposit shall be returned to the purchaser upon completion of the contract. In lieu of the deposit of a certified check, cashier's check, traveler's check, or postal money order, the purchaser may furnish a performance bond with surety approved by, and in a form acceptable, to said Contracting Officer, the penal sum of such bond to be the same as the total of performance deposits provided for above. Standard Form 25 may be used for this purpose.

c. **ADVANCE PAYMENTS.** The purchaser agrees to make periodic deposits as payments in advance for forest products when billed.

(1) For unit price sales, such deposits shall be:

(a) For all contracts of \$1,000 or less, the balance of the estimated total purchase price.

(b) For all other contracts, an amount to be established by the Contracting Officer but in no case less than 10% of the total estimated price.

(In the event there is any surplus of funds to purchaser's credit on deposit upon completion of removal operations as required under the terms of the contract, a refund of such surplus will be made to said purchaser.)

(2) For lump sum sales, the purchase price shall be paid as

(a) On bids below \$5,000, payment in full is required within seven (7) days after notice of award. Bid deposit will be applied toward the amount due.

(b) Bids of \$5,000 - \$10,000, \$5,000 on award and balance when approximately 40% of forest products has been cut. On bids \$10,000 and larger, \$5,000 on award and the remainder in amounts of \$5,000 as requested by Resident Forester or Inspector. The determination of the frequency of \$5,000 payments will be based on the volume of the material cut as determined by the Contracting Officer, having as its objective that the amount paid in shall at all times be the equivalent of at least 10% more than the percentage of forest products cut. To aid in this determination, the books of account and inventories of the purchaser shall be available for inspection by the Contracting Officer.

3. DEFAULTS.

If, after the award, the purchaser breaches the contract by failing to make any payments as required, or by failing to remove the property as required, then the Contracting Officer may send the purchaser a fifteen-day written notice of default (calculated from date of mailing), and upon purchaser's failure to cure such default within that period (or such further period as the Contracting Officer may allow), the purchaser shall lose all the right, title and interest which he might otherwise have acquired in and to the property as to which a default has occurred. The purchaser agrees that in the event he fails to pay for the property or remove the same within the prescribed time, the Contracting Officer at his election and upon notice of default shall be entitled to retain (or collect) as liquidated damages a sum equal to an amount hereinafter specified. Whenever the Contracting Officer exercises this election, he shall specifically apprise the purchaser either in the original notice of default (or in separate subsequent written notice) that upon the expiration of the period prescribed for curing the default the formula amount will be retained (or collected) by the Government as liquidated damages. The maximum sum, moreover, which may be recovered by the Government as damages for failure of the purchaser to remove the property and pay for the same shall be such formula amount. If the purchaser otherwise fails in the performance of his obligations thereunder, the Government may exercise such rights and may pursue such remedies as are provided by law or under the contract.

4. DISPUTES.

Except as otherwise provided in this contract, any dispute concerning a question of fact arising under this contract which is not disposed of by agreement shall be decided by the Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the purchaser. The decision of the Contracting Officer shall be final and conclusive unless, within thirty (30) days from the date of receipt of such copy, the purchaser mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Secretary. The decision of the Secretary or his duly authorized representative for the determination of such appeals shall be final and conclusive unless determined to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the purchaser shall be afforded an opportunity to be heard and to offer evidence in support of his appeal. Pending final decision of a dispute hereunder, the purchaser shall proceed diligently with the performance of the contract and in accordance with the Contracting Officer's decision.

5. VOLUME DETERMINATION (UNIT PRICE SALE).

a. The quantity of units sold under this contract of sale will be determined by weighing each truckload at a Government operated weight station when available or at a consumer mill or commercial weight station acceptable to and approved in writing by the Contracting Officer. Purchaser operated weight scales will not be authorized. When the use of consumer mill or commercial scales is authorized, the purchaser will pay the cost of weighing, if any, and furnish to the Government Project Office on a frequency to be established, certified weight tickets for each load showing data and information required by the Contracting Officer. With the written consent of the Contracting Officer, the quantity of units may be based upon cubic foot measurements, utilizing an acceptable weight conversion factor. Such quantities will be based on net units plus any loss due to purchaser's fault. Mixed loads of various items under the contract may be removed provided payment shall be at the rate of the item having the highest unit price.

b. Forest products sold under this contract may be removed as a product other than that specified, provided that when the sale is under the weight method, the product is weighed with all bark intact or provisions made for bark weight through mutual agreement.

6. TITLE.

Unless otherwise specified in the Invitation, title to the items of property sold hereunder shall vest in the purchaser as and when full and final payment is made.

7. BILLINGS.

The purchaser will be billed periodically for the estimated quantities of forest products determined by the Contracting Officer to be removed during a given operational period.

8. PAYMENTS.

All payments shall be made by certified check, cashier's check, bank draft, postal or express money order, payable to the Treasurer of the United States. Billing payments will be remitted within five (5) days of date of the billing, directly to the Project Office. All other payments will be remitted to the District Engineer, U. S. Army Engineer District, Savannah, P.O. Box 889, Savannah, Georgia 31402.

9. EQUIPMENT.

Without regard to weather or ground conditions purchaser must at all times, keep tractors, trucks, or other required equipment in operation on the sale area, as determined by the Contracting Officer, to maintain the minimum production rate during each calendar month and to complete this contract of sale within the time allocated.

10. MILITARY MISSION DELAYS.

Operations may be delayed from time to time and area closed because of military training. Purchaser will make daily checks with the Project Office regarding military schedules affecting the sale area. If the sale area is closed as a result of military training for a continuous period of thirty (30) calendar days or a total of sixty (60) calendar days, then by mutual agreement between the Contracting Officer and the purchaser the contract may be extended or terminated. If terminated, the purchaser will be relieved of any further responsibility of removal of the forest products sold hereunder, and any sums prepaid or on deposit will be equitably adjusted upon clearance and final inspection of the area. Under lump sum contracts this adjustment will be made in the same manner as outlined in paragraph 12 below.

11. EXTENSION OF TIME.

The Contracting Officer may by a Change Order extend the time allocated for removal:

a. When the total volume of the forest product designated for removal exceeds the estimated volume advertised, the time allocated for removal may be extended for an equitable period, based upon the minimum weekly production required to complete the removal of the original estimated contract volume within the original allocated time.

b. When purchaser desires a reasonable extension of time for his own convenience, provided (1) the purchaser obtains concurrence for delay from any sawtimber or pulpwood purchaser also in the sale area(s); (2) the Contracting Officer determines that the extension will not endanger fiscal required installation deadlines; and (3) the consideration for the extension is mutually agreed upon by purchaser and said Officer.

c. For days lost by the purchaser due to closure of the sale area for military training or stoppages ordered by the Contracting Officer or his duly authorized representative.

d. For reasonable mobilization time (other than initial mobilization) as result of major interruptions during contract period and where it is determined necessary by the Contracting Officer or his duly authorized representative.

e. For delays due to fires, floods, earthquakes, epidemics, quarantine, or strikes; provided, that the purchaser shall within ten (10) days from the beginning of any such delay, notify the Contracting Officer in writing of the dates and causes of delay. Delays resulting from weather will not normally be justification for extensions of time.

12. METAL CONTAMINATION.

a. Some timber included under this sale contract may be contaminated with military bullets and/or shell fragments; and it is not intended that the purchaser be required to harvest such trees when the contamination is determined to be excessive. If military metal is encountered, the purchaser will assist in determining the degree and extent of the contamination. After a thorough examination and the Contracting Officer determines that the contamination is excessive, such timber or sale area

will either be deleted from the contract or, if mutually agreeable, a reduction in the unit price may be negotiated only for this contaminated material. The reduced price will be based on the extra cost of harvesting and utilizing such contaminated timber. In the event any portion of the sale area is deleted under a lump sum sale, the adjustment will be negotiated on the basis of a mutual cruise by representatives of both parties to determine volume and value of the timber deleted. The Government, however, will not substitute or replace contaminated timber with a like volume or area of timber for the amount withdrawn.

b. The purchaser shall hold the Government harmless for any damages to property or injury to persons which may arise out of the existence of nonexploded ammunition, metal or foreign objects in trees on the premises or for any damage whatsoever which may arise or result from the harvesting of timber by him or operations required hereunder.

13. SUPERVISION.

When cutting, logging, or other operations under this contract are in progress, the purchaser shall have a representative, readily available to the area of such operation at all times, who shall be authorized to receive, on behalf of the purchaser, any notices and instructions given by the Contracting Officer in regard to performance under this contract, and to take such action thereon as is required by the terms of this contract.

14. VEHICLE USE AND ACCESS ROADS.

A list of vehicles authorized to transport forest products under this contract will be furnished to the Project Office prior to the commencement of any removal operations. A number will be assigned each vehicle and such number will be plainly displayed on the front of the vehicle by use of a metal tag or other means acceptable to the Contracting Officer. Routes to be utilized for transportation of forest products from the reservation will be designated in writing by said Officer.

15. PROTECTION OF PROPERTY.

All Government property including telephone lines, ditches, bridges, and fences located within or immediately outside the exterior boundaries of the sale area, shall be protected so far as possible in logging and other operations, and if damaged, shall be repaired immediately by the purchaser. Subject to the approval of the Contracting Officer, any telephone line or fence which may be damaged in felling or logging operations may be moved from one location to another, or specified trees may be left uncut. Roads, trails, and designated fire lines shall at all times be kept free of logs, brush, and debris resulting from the purchaser's operations hereunder, and any road or trail used by the purchaser in connection with this sale that is damaged or injured beyond ordinary wear and tear, through such use, shall promptly be repaired by him to its original condition.

16. SECURITY, FIRE, SAFETY, AND OTHER REGULATIONS.

All operations in connection with the removal of forest products sold hereunder shall be subject to such security, fire, safety, sanitary, and other rules and regulations necessary for the protection of Government personnel and property as the Contracting Officer may from time to time prescribe.

17. BINDER CHAINS AND SECURITY SEALS.

Binder chains to secure loads will be affixed to the vehicle in such a manner that all forest products are securely locked in position by use of a metal security seal as directed by the Contracting Officer prior to the load leaving the sale area. The purchaser will be held responsible for all metal security seals issued to him and each seal will be accounted for in the manner prescribed.

18. FIRE SUPPRESSION.

The purchaser, his employees, agents, and all subcontractors under him shall exercise due diligence and take all reasonable and practicable action both independently and upon request of the Contracting Officer or Fire Marshal of the reservation to prevent and suppress forest fires both within the sale area and throughout the reservation. The purchaser agrees to reimburse the Government for the cost of fire suppression incurred as the result of his negligence or willful acts.

19. TREE PAINT AND EQUIPMENT.

Marking hammers, paint or equipment for painting, or any other equipment similar to that used by the Government in the marking of trees, logs, or bolts are prohibited from the Government reservation.

20. RECORDS

Books and records of the purchaser relating to all operations covered by this contract shall be open to inspection at any time by the Contracting Officer and available for audit with the understanding that the information obtained shall be regarded as confidential.

21. GRATUITIES.

a. The Government may, by written notice to the purchaser, terminate the right of the purchaser to proceed under this contract if it is found, after notice and hearing by the Secretary or his duly authorized representative, that gratuities (in the form of entertainment, gifts, or otherwise) were offered or given by the purchaser, or any agent or representative of the purchaser, to any officer or employee of the Government with a view toward securing a contract or securing favorable treatment with respect to the awarding or amending, or the making of any determinations with respect to the performing of such contract; provided, that the existence of the facts upon which the Secretary or his duly authorized representative makes such findings shall be in issue and may be reviewed in any competent court.

b. In the event this contract is terminated as provided in subparagraph a above, the Government shall be entitled (1) to pursue the same remedies against the purchaser as it could pursue in the event of a breach of the contract by the purchaser, and (2) as a penalty in addition to any other damages to which it may be entitled by law, to exemplary damages in an amount (as determined by the Secretary or his duly authorized representative) which shall be not less than three nor more than ten times the costs incurred by the purchaser in providing any such gratuities to any such officer or employee.

c. The rights and remedies of the Government provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

22. NONDISCRIMINATION IN EMPLOYMENT.

In connection with the performance of work under this contract, the purchaser agrees as follows:

a. The purchaser will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; lay-off or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The purchaser agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

b. The purchaser will, in all solicitations or advertisements for employees placed by or on behalf of the purchaser, state that all qualified applicants will receive consideration for employment without regard to race, creed, color, or national origin.

c. The purchaser will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency Contracting Officer advising the said labor union or workers' representative of the purchaser's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

d. The purchaser will comply with all provisions of Executive Order No. 10925 of March 6, 1961, and of the rules, regulations, and relevant orders of the President's Committee on Equal Employment Opportunity created thereby.

e. The purchaser will furnish all information and reports required by Executive Order No. 10925 of March 6, 1961, and by the rules, regulation, and orders of the said Committee, or pur-

suant thereto, and will permit access to his books, records, and accounts by the contracting agency and the Committee for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

f. In the event of the purchaser's non-compliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations or orders, this contract may be cancelled in whole or in part and the purchaser may be declared ineligible for further government contracts in accordance with procedures authorized in Executive Order No. 10925 of March 6, 1961, and such other sanctions may be imposed and remedies invoked as provided in the said Executive Order or by rule, regulation, or order of the President's Committee on Equal Employment Opportunity, or as otherwise provided by law.

g. The purchaser will include the provisions of the foregoing paragraphs a through f in every subcontract or purchase order unless exempted by rules, regulations, or orders of the President's Committee on Equal Employment Opportunity issued pursuant to Section 303 of Executive Order No. 10925 of March 6, 1961, so that such provisions will be binding upon subcontractor or vendor. The purchaser will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for non-compliance; PROVIDED, HOWEVER, That in the event the purchaser becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the purchaser may request the United States to enter into such litigation to protect the interests of the United States.

23. LIQUIDATED DAMAGES.

Without derogation of any other rights afforded it by this contract, the Government through its Contracting Officer may determine the extent of damages arising from any of the causes hereinafter set forth, and the purchaser agrees to pay a penalty therefor in an amount to be determined by the Contracting Officer as liquidated damages for the injury and/or cost suffered by the Government; but in no event to exceed the maximum penalty shown in the schedule below:

CAUSE OR VIOLATION	MAXIMUM PENALTY*
1. Cutting or damaging undesignated trees intentionally or through negligence or carelessness.	Double the unit sale price or fair market value for the respective forest product.
2. Failure to utilize merchantable material.	Unit sale price for the respective forest product.
3. Removal of material harvested from the designated sale area without measurement in accordance with the terms of the contract.	Double the unit price for the respective forest product.
4. Continued failure to cut stumps in accordance with specifications.	Fifty (50) cents per stump

*When sale is under the lump sum method, the unit sale price(s) will be determined through appraisal by the Contracting Officer.

24. CONTRACT TERMINATION.

The Government may terminate this contract at any time by giving ten (10) days notice in writing to the purchaser. In the event the contract is so terminated, the Government shall not be responsible for any damages or claims of whatsoever nature which result from said termination, except that funds on deposit in excess of that required in payment of material cut and removed shall be refunded, unless otherwise provided herein. Under lump sum contracts this refund will be based on volumes and values determined under the same procedure as outlined in paragraph 12, supra.

25. INVITATION, BID, AND ACCEPTANCE.

This "Invitation, Bid, and Acceptance" shall constitute the entire contract of sale between the purchaser and the Government.

**SALE OF GOVERNMENT FOREST PRODUCTS
SPECIAL SALES TERMS AND CONDITIONS**

INVITATION FOR BIDS NO.

PAGE

1. COMMENCEMENT.

The purchaser will commence removal of the forest products within _____ () days after notice to proceed.

2. SCHEDULE OF REMOVAL AND COMPLETION.

The purchaser agrees to remove from the sale area all forest products designated to be removed under this contract prior to date(s) shown below and at the minimum production rate specified herein:

Item 1: _____	Item 5: _____	Item 9: _____
Item 2: _____	Item 6: _____	Item 10: _____
Item 3: _____	Item 7: _____	Item 11: _____
Item 4: _____	Item 8: _____	Item 12: _____

The minimum rate of production will be determined by dividing the number of weeks within the period of time established for the item purchased into the estimated volume or quantity of the forest product included under such item.

3. PERIODS OF OPERATIONS.

Unless authorized by the Government, removal of forest products will not be permitted on Saturdays, Sundays, or on any Government holiday and will be accomplished only during the hours designated by the Contracting Officer. The daily schedule of hours may be modified due to seasonal changes by notice in writing to the purchaser.

4. IDENTIFICATION OF FOREST PRODUCT(S) INCLUDED IN SALE.

5. MERCHANTABILITY.

SPECIES AND PRODUCT	TREE SPECIFICATIONS				
	UNITS PER TREE	LENGTH FEET	DIAMETER INSIDE BARK AT SMALL END	NET SCALE IN % OF GROSS SCALE	MINIMUM NET SCALE

The order of logging will be designated by the Contracting Officer. Purchaser's proposal for sequence of cutting will be considered. All forest products will be removed and all phases of operations completed within the assigned operational unit prior to commencement of operations in another operational unit. From time to time, due to military activities, the order of operations may be realigned by the Contracting Officer. Operations under this contract will be conducted in a manner that will not interfere with removal operations under other contracts. In the event more than one operational unit is purchased by a single pole and piling or sawtimber buyer, and the pulpwood by separate buyers, the higher timber product purchaser may be required to harvest in the several operational unit areas at the same time, or in such an order to permit purchasers of pulpwood in the same areas to obtain continuous and required production requirements. Pulpwood removal will follow the sawtimber harvesting as closely as possible without endangering workers, but in no case more than 20-days cutting behind sawtimber purchaser, unless otherwise directed by the Contracting Officer in writing. When special areas of pulpwood are included under the sale for the purpose of regulating pulpwood purchaser's progress at normal rate, harvest within such areas will be subject to advance approval of the Government. Loading points will be in open areas and not less than _____' from main and _____' from post roads unless otherwise authorized by the Government.

All trees to be harvested will be cut as low as possible and not higher than _____" for pine and _____" for hardwood and cypress above the ground line on the highest side, except when the measurements are impractical in the judgment of the Contracting Officer.

Pine tops and limbs will be lopped to within _____" of the ground within _____ feet of

SAD Form 1947F--R
24 May 71

9. SAWMILLS.

a. 1/ Sawmills will not be permitted on the reservation.

b. 1/ Sawmills will be permitted on the reservation at locations authorized by the Contracting Officer and will be operated only on weekdays between the hours authorized. Location and the minimum requirements for the preparation and operation of all sawmills will be approved and prescribed in advance. Strips, slabs, and mill waste (including sawdust) 1/ will be burned in slab pits or removed from the reservation as it is produced. Sawmills will be equipped with slab conveyor belts. Mill sites will be policed and maintained in a clean condition acceptable to the Contracting Officer daily. Upon completion of sawmill operations and abandonment of the area, sawmill sites will be clean, free of all equipment and machinery, and acceptable to the Contracting Officer before crews will be permitted to operate elsewhere on the sale area.

1/ Delete inappropriate provisions.

10. WEIGHT FACTORS (UNIT PRICE SALE).

Weight factors to be utilized to determine the number of units of the respective forest product are as follows:

Pine Sawtimber:	_____	# equal 1 M B.F. (Scribner Dec. C Log Rule)
Yellow Poplar Sawtimber:	_____	# equal 1 M B.F. " " "
Cypress Sawtimber:	_____	# equal 1 M B.F. " " "
Other Hardwoods:	_____	# equal 1 M B.F. " " "
Pine Pulpwood:	_____	# equal 1 Std. Cd. (128 Cu. Ft.)
Hardwood Pulpwood:	_____	# equal 1 Std. Cd.

Timber Products Harvested on a Ton Basis: 1 Ton equals 2,000#

11. ESTIMATED VOLUMES (LUMP SUM SALE).

The timber described to be harvested is sold as a lot in its entirety for one lump sum, and the Government makes no guaranty or warranty as to the volume of material.

For information only, the estimated volumes are as follows:

Pine Sawtimber:	_____	M B.F. (Scribner Dec. C)
Yellow Poplar Sawtimber:	_____	M B.F. (Scribner Dec. C)
Cypress Sawtimber:	_____	M B.F. (Scribner Dec. C)
Other Hardwoods:	_____	M B.F. (Scribner Dec. C)
Pine Pulpwood:	_____	Std. Cds.
Hardwood Pulpwood:	_____	Std. Cds.

(Inappropriate of above 2 paragraphs to be deleted.)

ATTACHMENT B

Invitation No. SAV-RE-73-

SALE

GOVERNMENT - OWNED FOREST PRODUCTS LOCATED ON

FORT STEWART MILITARY RESERVATION

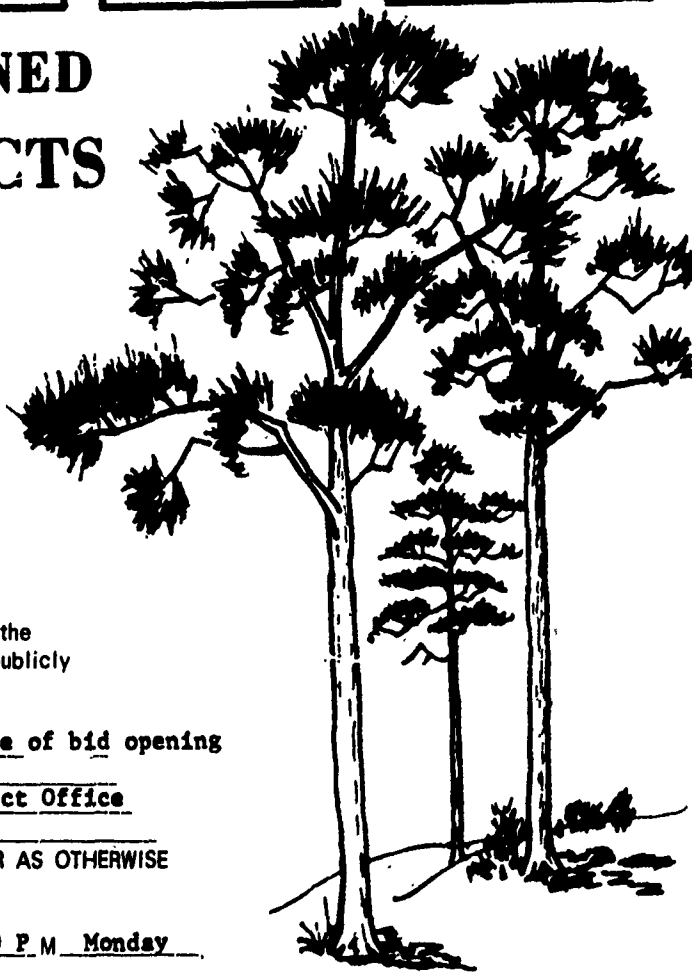
PAGE NO. 1 OF 3 PAGES OF
INVITATION NO. SAV-RE-73-
DATED 2 January 1973

Sealed bids in single
subject to the terms and conditions set forth herein,
for the purchase and removal of the Government-owned
property listed in this Invitation, will be received until the
time, date, and at the place indicated below, and then publicly
opened.

TIME OF OPENING 11:00A M, local time at place of bid opening
DATE OF OPENING 18 January 1973
PLACE OF OPENING Timber Harvesting Project Office
Fort Stewart, Georgia
BID DEPOSIT OF 10 % OF TOTAL AMOUNT BID OR AS OTHERWISE
INDICATED IS REQUIRED.

INSPECTION INVITED BETWEEN 8:00 A M AND 4:00 P M Monday
rough Friday ON ADVANCE NOTICE
ARRANGE WITH John F. Riddick TEL. NO. 767-4005
Resident Inspector

ISSUED BY District Engineer, US Army Engineer District, Savannah
ADDRESS Post Office Box 889, Savannah, GA 31402
PROPERTY LOCATED AT Fort Stewart Military Reservation, GA



SALE OF GOVERNMENT FOREST PRODUCTS BID AND AWARD		INVITATION FOR BIDS NO. SAV-RE-72-	PAGE 2
BID (This Section to be completed by the Bidder)		DATE OF BID _____ 19__	
<p>In compliance with the Invitation identified on the cover page hereof, and subject to all the sale terms and conditions contained in Instructions to Bidders, General Sale Terms and Conditions, and Special Sales Terms and Conditions, all of which are incorporated as a part of this Bid, the undersigned offers and agrees, if this Bid be accepted within 60 calendar days after date of Bid opening, to purchase and pay for any or all of the items listed for sale on Item Bid Page and to remove the property and perform the other required work as specified herein, after notice of acceptance by the Government. The total amount bid is \$ _____, Attached is the required Bid deposit in the form of _____, in the amount of _____.</p>			
<p><i>All bidders should complete the "Certificate As to Small Business Status" set forth below. This certificate must be completed and made a part of every Invitation to Bid on the sale of Government-owned timber with an estimated value of \$2,000 or more. Failure to properly execute this certificate will not invalidate a bid, but a proper statement must be signed before the bid is accepted by the Government. Refusal or delay in executing a proper statement is grounds for rejecting the bid. Intentional falsification of this certificate is a criminal offense punishable by a fine of not more than \$5,000 or by imprisonment for not more than two years, or both. (Title 15, United States Code, Section 645(a).)</i></p>			
<u>CERTIFICATE AS TO SMALL BUSINESS STATUS</u>			
<p>The bidder certifies that he (is) (is not) a small business concern within the terms of the following definition:</p> <p>In sales of Government-owned forest products a "small business" is a concern that: (1) is primarily engaged in the logging or forest products industry; (2) is independently owned and operated; (3) is not dominant in its field of operation; and (4) together with its affiliates does not employ more than 500 persons.</p>			
NAME AND ADDRESS OF BIDDER (Street, city, state, and zone) (Type or print)		SIGNATURE OF PERSON AUTHORIZED TO SIGN BID	
		SIGNER'S NAME AND TITLE (Type or print)	
<u>CORPORATE CERTIFICATE</u>			
<p>I, _____, certify that I am the _____</p> <p>of the corporation named as Purchaser herein; that _____, who signed this contract</p> <p>on behalf of the Purchaser, was then _____ of said corporation; that said</p> <p style="text-align: center;">(Title)</p> <p>contract was duly signed for and in behalf of said corporation by authority of its governing body, and is within the scope of its corporate powers.</p> <p style="text-align: right;">Signature _____ (CORPORATE SEAL)</p>			
ACCEPTANCE BY THE GOVERNMENT (This Section for Government use only)		DATE OF ACCEPTANCE _____ 19__	
ACCEPTED AS TO ITEMS NUMBERED _____		UNITED STATES OF AMERICA	
		BY _____ (Contracting Officer)	
TOTAL AMOUNT \$ _____	CONTRACT NUMBER _____	TITLE OF CONTRACTING OFFICER _____	

SALE OF GOVERNMENT FOREST PRODUCTS ITEM BID PAGE		INVITATION FOR BIDS NO. SAV-RE-73-		PAGE 3	
ITEM NO.	PRODUCTS FOR SALE	QUANTITY (No. of Units)	UNIT OF MEASURE	TO BE SUPPLIED BY BIDDER	
				PRICE BID PER UNIT	TOTAL PRICE BID DOLLARS CENTS
<u>FORT STEWART, GEORGIA</u>					
1.	PINE SAWTIMBER (All trees 11" dbh and larger)	500	MBF		
2.	PINE PULPWOOD (All trees 6" - 10" dbh turpented portions of trees and tops)	175	TON		
<p>Timber offered for sale is located within Areas A and B of the Fort Stewart Military Reservation, Georgia, and is marked with paint at dbh and below stump height. Sawtimber is marked with blue paint and pulpwood with orange paint.</p> <p>Completion Dates: Item 1 _____ Item 2 _____</p> <p>Performance Bond: 20%</p> <p>Provisions of Standard Form, Sale Contract, Timber, SAD Form 1947-R, 24 May 71, pertaining to method of sale, liability, records, gratuities and non-discrimination will be applicable to this sale contract.</p> <p style="text-align: center;">UNIT PRICE SAMPLE</p>					
<p>BIDDER IS CAUTIONED TO INSPECT THE PROPERTY</p> <p>BIDDER'S NAME SHOULD APPEAR ON EACH ITEM BID PAGE CONTAINING A BID.</p>				NAME OF BIDDER (Type or print)	

ATTACHMENT C

DISPOSAL PLAN

1. METHOD OF DISPOSAL. Unit price sale or lump sum sale with reasons for selection of the method. If unit price method selected, show optional method of bidding (and reasons), if any, and indicate whether by weight, log scale, or measurement or combination of several methods and why.
2. SUGGESTED TIMBER PRODUCT ITEMS WITH RESPECTIVE VOLUMES. If volumes are different from those shown in report of availability, explain reasons.
3. RECOMMENDED ADVERTISEMENT PERIOD. This should be correlated with reasons for disposal (routine or emergency), future availabilities under Forest Management Plan, deadlines, military interference, etc.
4. COORDINATION WITH POST OR INSTALLATION FORESTER. Include statement as to review of availability (paragraph 7a of SOP) and that all timber has been marked and boundaries clearly established.
5. PROMOTIONAL WORK ACCOMPLISHED OR TO BE ACCOMPLISHED.
6. UNUSUAL OR SPECIAL REQUIREMENTS. Including those on which an explanation will clarify their inclusion in invitation, such as contamination, unusual logging conditions, harvesting delays, etc.

ATTACHMENT D

Contract No. _____

Installation _____

TIMBER HARVESTING PRE-WORK CONFERENCE CHECKLIST

☐ Objectives in Timber Sales Work:

- a. To accomplish removal of timber in accordance with approved Forest Management Plan prepared for installation or for clearance of firing ranges, training areas, roads or utility lines rights-of-way; Post's interest and Post Forester's responsibilities; necessity of good relations with Post.
- b. Good workmanship, good operating methods, decent and adequate equipment, good relationships with Corps of Engineers' employees.
- c. Review work to be accomplished and the Government's desire to assist the contractors in accomplishing their work; encourage frequent visits by the prime contractor to the office and to the sale area.

☐ Pre-Contract Needs:

- a. Post clearance on trucks. Post regulations.
- b. Numbers conspicuously painted on bumpers of trucks.
- c. Summarize the necessary equipment and manpower to accomplish the job, i.e., number of skidders, pulpwood trucks, tractors, etc.
- d. Use of Post roads and rules on construction of woods roads, log decks, etc.

☐ Contract Specifications:

- a. Location and Description of Timber: All and only designated trees to be cut; harvesting by "logging units" and completion of logging units before movement to other areas; pulpwood harvesting will keep pace with sawtimber harvesting; assignment of logging units by the Resident Forester; indicate all timber on areas will be harvested regardless of the volume.
- b. Utilization Standards:
 - (1) Size (d.b.h.) of trees to be cut; tree with one 8-foot log is merchantable.
 - (2) Utilization of turpented portions of trees; top utilization requirements; stump heights.
 - (3) Lopping requirements (felling, bucking, and lopping will be done in one operation). Tops and debris pulled back from leave trees.
- c. Pulpwood Removal:
 - (1) Seal Issuance Procedure: Importance of proper accountability of seals; all seals not used will be accounted for by contractor.
 - (2) Proper identification of tickets, i.e., truck number, seal number, driver, and reservation.
 - (3) Loading not permitted at sidings where contractor loads private wood.
 - (4) Explain procedure where pulpwood goes to private woodyards, i.e., proper signs on railroad cars, identification of stockpiled pulpwood, separate compounds for Government wood, truck tickets, seal boxes.
 - (5) Purchaser's tickets submitted promptly with a signed letter of transmittal. Purchaser will pay for wood on which deductions were due to the purchaser's negligence, such as angled wood, poorly trimmed, short or long wood.
 - (6) Pulpwood crews will not be moved out of assigned areas without permission of the Resident Forester.
 - (7) Government will inspect and approve each logging unit as it is completed.
- d. Weighing of Sawtimber and Pulpwood:
 - (1) Procedure in weighing on Government scales on reservation; specific routes of travel; issuance, use, and accountability of seals; contractor's hours of work; Government's hours at scales; procedure where trucks do not reach scales by closing time.

(2) Procedure in weighing on commercial scales off reservation; specific routes of travel; issuance, use, and accountability of seals; contractor's hours of work; Government's hours at scales; issuance of tickets for wood measurement and record; seal boxes cost of weighing contractor's obligation.

(3) Requirements for removal of wood of doubtful merchantability; credit procedure on turpentine wood not accepted by mill.

(4) Procedure on test run of pulpwood and sawtimber to determine weight factor; sample area and contractor's acceptance of it.

e. Field Operations:

(1) Acceptable full-time field superintendent in charge of purchaser's field of operations is mandatory. He receives instructions, acts on Resident Forester's recommendations, supervises purchaser's field operations, investigates violations.

(2) Notification procedure if area is unexpectedly closed due to military missions.

(3) Time to complete harvesting; order of logging in the area; minimum and maximum production required to complete on time; Government's production progress charts; purchaser obligated to place sufficient equipment and personnel to keep production up to contract requirements. Explain how working days are determined; payments for additional time not earned.

f. Sanitary Regulations:

(1) Waste paper, tin cans, garbage, and other waste will be disposed of as it accumulates on a daily basis.

(2) Mill sites kept clean of waste at all times.

g. Protection of Government Improvements:

(1) Protect telephone and powerlines; ditches, road banks, and other improvements (if damaged, repair immediately).

(2) Roads, bridges, trails, streams, fire lanes kept free of brush, logs, and slash on a daily basis; main roads will not be used as log decks or loading sites.

h. Fire Protection:

Contractor and personnel exercise diligence in preventing and suppressing fires. Contractor is responsible for fire suppression costs if he is found negligent.

i. Metal Contamination:

(1) Explain possible presence of small amounts of military metal in any timber located on the reservation.

(2) Timber containing ordinary 30-calibre bullets should be harvested; where 50-calibre or other damaging metal is encountered, the Government will demonstrate the method of using mine detector but purchaser will do searching and bear cost of same; if damaging metal in timber is determined by Resident Forester to be excessive, boundaries of said timber will be marked out with paint and the timber left; if timber is deleted, no substitute volume will be made available.

☐ Finances:

a. Purpose of the bond.

b. Explain "advance payments"; and required payment of entire bill within 10 days of receipt.

c. Stress importance of submitting pulpwood tickets on time.

d. Time of issuance of bills (once a month for all forest products).

e. Only certified, cashier's, or approved company checks payable to Treasurer of the United States are acceptable and will be submitted to Resident Forester.

f. Balance of monies will be returned upon completion.

☐ Range Firing:

a. Necessity of contractor checking with timber harvesting office.

b. Time lost due to military missions is returned if it is needed.

c. Danger of duds in contract area.

☐ **Security:**

a. Emphasize need for contractors to plan own security program by:

(1) Educating drivers with regard to seals on trucks, truck bumper numbers, seal boxes, post identification stickers, and possible penalties if such is not enforced.

(2) Frequent inspections of speed limits.

(3) Informing employees of speed, weight, and size limitations as required by installation regulations and State law. Also, insure that employee(s) conform with the regulations as regards to securing loads properly.

b. Discontinuance of harvesting operations on holidays, Saturdays, and Sundays.

c. Explain Government's after-hour inspections.

d. Losses of contractor property due to criminal acts should be promptly reported to installation law enforcement authorities and Corps timber harvesting personnel for appropriate action.

☐ **Contract Compliance:**

a. Harvesting, removal of timber, and payments must all be in strict compliance with contract terms.

b. Performance bond insures faithful performance.

c. Explain penalties for cutting undesignated trees or failure to cut trees, for leaving merchantable material in the woods, and for leaving high stumps.

The procedures checked with (X) have been discussed with _____
(Contractor)

_____ and _____ on _____ 19_____
(Other)

Acknowledgment:

Contractor or Authorized Agent

Authorized Representative of
Contracting Officer

ATTACHMENT E

[illegible]

ATTACHMENT F

REPORT OF TIMBER HARVESTED							
TO				Contract No.			Date
				Contractor			
				Reporting Period From _____ To _____			
Item No.	Report No.	Product Sold	Unit Of Measure	Volume Cut During Period	Volume Cut Previously	Volume Cut To Date	Contract Volume
From:					Resident Inspector		
_____ T. H. Project							
Remarks							
Completion Date:							



IN REPLY REFER TO

ATTACHMENT G
DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 889
SAVANNAH, GEORGIA 31402

Re: Contract No.

Dear Sir:

Production record on referenced contract is as follows:

a. Period Covered:

b. Period Allotted for Harvesting:

Date Harvesting
to Proceed

Date for
Completion

Weeks Remaining
for Completion

c. Volumes Covered by this Contract:

_____ (M B.F.) (Tons) Sawtimber

_____ (M B.F.) (Tons) Pulpwood

_____ (Tons)

d. Volume Harvested (M B.F., Cords, Tons):

To Date

Average per Week

Contract Minimum
per Week

e. _____ % (Above) (Behind) Schedule.

If you are behind schedule, please have your Field Superintendent contact this office immediately. It is of the utmost importance that contracts be kept on, or above, schedule at all times.

Sincerely yours,

Resident Forester

ATTACHMENT H

PROJECT COSTS - TIMBER SALES CONTRACTS

PROJECT:

PERIOD:

REVENUE RETURN

DOLLARS
(in thousands)

DOLLARS
(in thousands)

PERCENT

PROJECT OFFICE COST TO REVENUE RETURN

NO YORK 100-100000

Previous editions are obsolete

ATTACHMENT I

Harvesting Record of Installation Clearance on Logging Units							
Contractor:				Contract No.			
	Logging Unit No.	Date Completed	Date TH Inspection	Date Post Inspection	Approval		
					Ground inspection of harvesting in this logging unit is satisfactory and complete.		
					SIGNATURE _____		
					Post Forestry Department		
					Ground inspection of harvesting in this logging unit is satisfactory and complete.		
					SIGNATURE _____		
					Post Forestry Department		
					Ground inspection of harvesting in this logging unit is satisfactory and complete.		
					SIGNATURE _____		
					Post Forestry Department		
					Ground inspection of harvesting in this logging unit is satisfactory and complete.		
					SIGNATURE _____		
					Post Forestry Department		
					Ground inspection of harvesting in this logging unit is satisfactory and complete.		
					SIGNATURE _____		
					Post Forestry Department		
					Ground inspection of harvesting in this logging unit is satisfactory and complete.		
					SIGNATURE _____		
					Post Forestry Department		

ATTACHMENT J

DISPOSITION FORM																																																						
(AR 340-13)																																																						
OFFICE SYMBOL OR FILE REFERENCE		SUBJECT																																																				
		Request for Extension of Time																																																				
TO Chief, TH Sec	FROM	DATE	CMT 1																																																			
<p>1. We recommend an extension of time under the following contract:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Contract No.: _____</td> <td style="width: 50%;">Present Compl Date: _____</td> </tr> <tr> <td>Reservation: _____</td> <td>Calendar Days _____</td> </tr> <tr> <td>Contractor: _____</td> <td>Ext Recommended: _____</td> </tr> <tr> <td></td> <td>New Compl Date: _____</td> </tr> </table>					Contract No.: _____	Present Compl Date: _____	Reservation: _____	Calendar Days _____	Contractor: _____	Ext Recommended: _____		New Compl Date: _____																																										
Contract No.: _____	Present Compl Date: _____																																																					
Reservation: _____	Calendar Days _____																																																					
Contractor: _____	Ext Recommended: _____																																																					
	New Compl Date: _____																																																					
<p>2. The following number of working days were lost under this contract:</p> <table style="width: 100%; border: none;"> <thead> <tr> <th style="width: 45%;"></th> <th style="width: 10%;">During Original Contract Period</th> <th style="width: 10%;">Since 1st Ext Extended</th> <th style="width: 10%;">Since 2d Ext Extended</th> <th style="width: 10%;">Since 3d Ext Extended</th> </tr> <tr> <th></th> <th><u>Cal Days</u></th> <th><u>Cal Days</u></th> <th><u>Cal Days</u></th> <th><u>Cal Days</u></th> </tr> </thead> <tbody> <tr> <td>a. Days lost to firing or mili- tary missions</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>b. Days lost due to bad weather.</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>c. Days lost in b above due to abnormally bad weather.</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>d. Days lost due to</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td style="text-align: right;">Total</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> <tr> <td>e. Days contractor could have worked but did not.</td> <td>_____</td> <td>_____</td> <td>_____</td> <td>_____</td> </tr> </tbody> </table>						During Original Contract Period	Since 1st Ext Extended	Since 2d Ext Extended	Since 3d Ext Extended		<u>Cal Days</u>	<u>Cal Days</u>	<u>Cal Days</u>	<u>Cal Days</u>	a. Days lost to firing or mili- tary missions	_____	_____	_____	_____	b. Days lost due to bad weather.	_____	_____	_____	_____	c. Days lost in b above due to abnormally bad weather.	_____	_____	_____	_____	d. Days lost due to	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	Total	_____	_____	_____	_____	e. Days contractor could have worked but did not.	_____	_____	_____	_____
	During Original Contract Period	Since 1st Ext Extended	Since 2d Ext Extended	Since 3d Ext Extended																																																		
	<u>Cal Days</u>	<u>Cal Days</u>	<u>Cal Days</u>	<u>Cal Days</u>																																																		
a. Days lost to firing or mili- tary missions	_____	_____	_____	_____																																																		
b. Days lost due to bad weather.	_____	_____	_____	_____																																																		
c. Days lost in b above due to abnormally bad weather.	_____	_____	_____	_____																																																		
d. Days lost due to	_____	_____	_____	_____																																																		
_____	_____	_____	_____	_____																																																		
_____	_____	_____	_____	_____																																																		
Total	_____	_____	_____	_____																																																		
e. Days contractor could have worked but did not.	_____	_____	_____	_____																																																		
<p>3. Estimated volume to be cut above contract volume. _____</p>																																																						
<p>4. The Post Engineer indicates the area is still available for harvesting.</p>																																																						
<p>APPROVED: _____</p> <div style="text-align: right; margin-top: 20px;"> _____ Resident Inspector </div>																																																						

SAS FL 74
5 DEC 61

SUPERSEDES EDITION OF 22 AUG 60, WHICH MAY BE USED.

ATTACHMENT K

SECURITY REPORT TIMBER HARVESTING OPERATIONS						DATE:
						INSPECTOR:
SAWMILLS	OWNER	CONTRACT NUMBER	TIME	YARDED LOGS		LOCATION
				NUMBER SCALED	NUMBER UNSCALED	
MILL #1	1/					
MILL #2	2/					
MILL #3	3/					
MILL #4	4/					
REMARKS: 1/						
2/						
3/						
4/						
ROUND LOGGER	OWNER	CONTRACT NUMBER	TIME	LOADED LOGS SCALED AND BRANDED		LOCATION
				YES	NO	
LOGGER #1	1/					
LOGGER #2	2/					
LOGGER #3	3/					
LOGGER #4	4/					
REMARKS: 1/						
2/						
3/						
4/						
PULPWOOD TRUCKS	DRIVER	CONTRACT NUMBER	TIME	SEAL NUMBER	LOCATION	
TRUCK #1	1/					
TRUCK #2	2/					
TRUCK #3	3/					
TRUCK #4	4/					
REMARKS: 1/						
2/						
3/						
4/						
SIGNATURE (INSPECTOR):						
RESERVATION						

SAD FORM 1000-R



SASRM

ATTACHMENT L

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 889
SAVANNAH, GEORGIA 31402

Re:

The contract which you have with the Government states the general contract specifications on harvesting and removal of pulpwood. This letter supplements those specifications and explains in more detail the procedures which the Government expects all pulpwood contractors to follow. They are as follows:

- a. All trucks must obtain Post clearance and be identified by an assigned number stencilled clearly in red on the front of each truck. Resident Inspector or Resident Forester will see that these numbers are so placed.
- b. Drivers must have proper identification and passes from Post at all times and a Timber Harvesting Truck Authorization card (SAD Form 2016-R).
- c. Trucks must be properly equipped with chain spot welded in proper places and as shown on the inclosed specification sheet.
- d. Trucks must use seals on each load of wood removed from the reservation.
- e. Trucks will be stationed on certain assigned contract areas. Movement of trucks from one contract to another is prohibited without advance notification and authorization by Resident Inspector or Resident Forester in charge.
- f. Trucks are not permitted to haul on more than one Government contract in any one day. Trucks are not permitted to haul wood from a Government contract and from a private wood contract in any one day when mill tally tickets are used as a basis of measurement.
- g. Trucks must be in a condition to travel military roads. Drivers must be constantly aware of speed limits and abide by these and other Post requirements.

SASRM

Contractors should be aware that pulpwood is Government property until it is weighed by the Government or delivered to rail points and loaded, or to woodyards and tickets properly prepared on the wood. It is understandable, therefore, that the Government's security in the movement of this wood must be intensive. We want you to realize fully the importance of these requirements because violations will have to be dealt with quite severely.

We will appreciate your cooperation in this effort and your coordination of this letter with our Resident Inspector or Resident Forester to be sure all of these requirements have been met on your contracts and will so continue throughout the contract period.

Sincerely yours,

1 Incl
as stated

SPECIFICATIONS FOR ATTACHMENT OF CHAINS
TO PULPWOOD LOGGING TRUCKS

All trucks hauling pulpwood off the reservation must have the binder chains permanently fastened by welding with seals properly attached. In accordance with provisions of the contract, instructions for securing pulpwood loads are as follows:

a. Chains will be used in securing pulpwood loads in one of the following methods.

(1) Method No. 1: Two chains, 1 long and 1 short, used primarily on bobtail trucks. (See attached sketch.)

(a) One chain must be fastened at the front of the load, either to the truck frame or to the "H" frame, by means of welding or "cold shot." This chain must be in one unbroken section, long enough to extend over the pulpwood load.

(b) The second chain must be similarly attached to the rear of the truck frame and in sufficient length to overlap the front chain by three feet.

(2) Method No. 2: One long chain only, used primarily on trucks with racks. The chain must be fastened at the front of the load by means of welding or "cold shot" to the truck frame. This chain must be in one unbroken section, long enough to extend over the pulpwood load and loop around the truck frame at the rear. (See attached sketch.)

b. After the pulpwood is loaded, the binder will be securely attached to the chains used in Method 1 or Method 2 and the load tightened. The seal will be attached and locked through links of both chains in such fashion as to allow the binder to tighten the load when necessary. The seal must be attached and locked at the loading point.

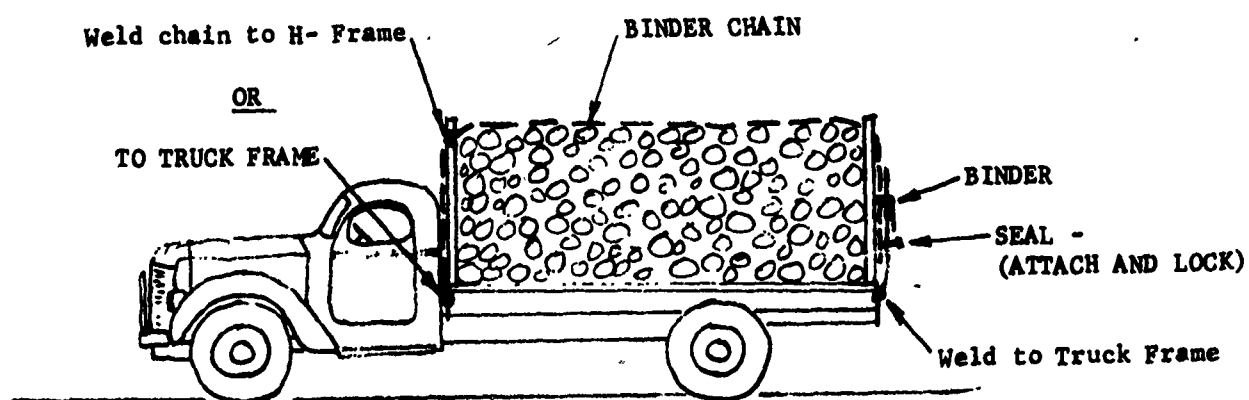
Violation of these instructions will restrict the driver from this reservation and may justify default of contract.

1 Incl
Sketch

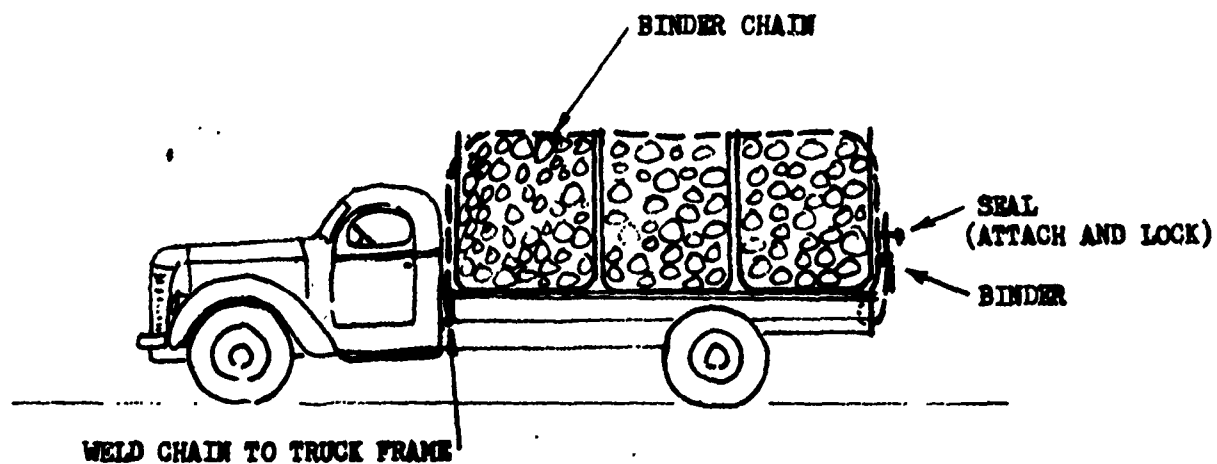
Incl 1 to Attachment L

SKETCH SHOWING WHERE THE BINDER CHAINS SHOULD BE PERMANENTLY
ATTACHED BY WELDING AND WHERE THE SEAL SHOULD BE LOCATED

METHOD NO. 1



METHOD NO. 2



Incl 1 to Attachment L

ATTACHMENT M

POLE AND PILING TALLY ON

AREA DESIGNATED FOR POLES AND PILES

Acreage in poles and piles: _____; Converting factor _____
 Trees tallied: _____ 6" up; _____ 9" up; (check one)
 Number 1/5 acre plots tallied: _____ (tally here)

(Use Dot Tally)

LENGTH (FT)	POLE CLASS										PILES	TOTAL
	1	2	3	4	5	6	7	9	10			
20				.	..							
25					.	..						
30						.	..					
35												
40							.					
45												
50												
55												
TOTAL												
TOTAL MBF												
TOTAL CORDS												

* This size and lower are below 10.0" d. b. h. o. b.
 ** This size and lower are below 9.0" d. b. h. o. b.

ATTACHMENT N

LOGGING UNIT _____ MARKING TALLY SHEET NO. PLOTS
PROJECT _____ OR ACREAGE _____
TYPE _____ (PULPROOD) DATE _____
PARTY _____

DBH (IN.)	NUMBER 5 1/2" STICKS									
	2	3	4	5	6	7	8	9	10	
5										
6										
7										
8										
9										
10										
TOTAL										

DBH (IN.)	PIN"																			
	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6	6 1/2	7	7 1/2	8	8 1/2	9	9 1/2	10	10 1/2
10																				
12																				
14																				
16																				
18																				
20																				
22																				
24																				
26																				
28																				
30																				
TOTAL																				

SUMMARY OF DATA				
	ON PLOTS		ON ENTIRE AREA	
BOARD FOOT VOLUME IN POLES AND PILES:	_____	M B.F.	_____	M B.F.
BOARD FOOT VOLUME IN SANTIMBER REMAINING:	_____	M B.F.	_____	M B.F.
TOTAL VOLUME OF POLES, PILES AND SANTIMBER:	_____	M B.F.	_____	M B.F.
NUMBER CORDS IN POLES AND PILES:	_____	ST. CDS.	_____	ST. CDS.
NUMBER CORDS IN PULPWOOD REMAINING:	_____	ST. CDS.	_____	ST. CDS.
TOTAL VOLUME OF POLES, PILES, AND PULPWOOD:	_____	ST. CDS.	_____	ST. CDS.

ATTACHMENT O

Table 1. Minimum diameter at breast height outside bark of various classes and lengths of poles.

Length of Pole	Pole Class									
	1	2	3	4	5	6	7	9	10	
Feet	Minimum d.b.h.o.b. (inches)									
16					7.8	7.1	6.5			
18			9.6	8.9	8.1	7.6	6.9			
20	11.4	10.7	9.9	9.2	8.5	8.0	7.2	No butt requirement		
22	11.9	11.2	10.5	9.6	8.9	8.3	7.6			
25	12.5	11.8	10.9	10.1	9.4	8.7	8.0			
30	13.6	12.7	11.8	10.9	10.1	9.4	8.7			
35	14.5	13.6	12.7	11.6	10.9	9.9	9.2			
40	15.2	14.3	13.4	12.3	11.4	10.5	9.8			
45	15.9	15.0	13.9	13.0	12.1	11.0	10.3			
50	16.6	15.6	14.5	13.6	12.5	11.6	10.7			
55	17.2	16.1	15.0	14.1	13.0	12.1				
60	17.9	16.6	15.6	14.5	13.4	12.5				
65	18.4	17.2	16.0	15.0	13.9					
70	19.0	17.7	16.6	15.4	14.3					
75	19.5	18.3	17.0	15.9						
80	19.9	18.6	17.5	16.3						
85	20.4	19.2	17.9							
90	20.8	19.5	18.3							

NOTE: Taken from "A Method of Determining Southern Pine Pole Classes from DBH," E. T. Hawes, Journal of Forestry, 1947.

ATTACHMENT P

Table 2. Size, weight, volume, board feet
of pine poles

Class and Minimum Circumference & Equivalent Diameter of Top - Inches	Length	Weight in Pounds	Volume Cubic Feet	Approx. Log Volume b.f.		Minimum Circumference & Equivalent Diameter at 6 Feet from Butt Inches	
				Scrib.	Int. $\frac{1}{4}$ "	Circum.	Diam.
Class 1 27" Circum. 8.59" Diam.	25	990	18.00	70	90	34.5	11.0
	30	1279	23.25	100	116	37.5	12.0
	35	1568	28.50	110	146	40.0	13.4
	40	1884	34.25	160	180	42.0	13.4
	45	2223	40.41	200	217	44.0	14.0
	50	2585	47.00	230	258	46.0	14.6
	55	2993	54.42	260	304	47.5	15.1
	60	3451	62.75	320	353	49.5	15.8
	65	4015	73.00	350	408	51.0	16.2
	70	4620	84.00	410	467	52.5	16.7
	75	5198	94.50	440	530	54.0	17.2
	75	5198	94.50	440	530	54.0	17.2
Class 2 25" Circum. 7.96" Diam.	25	811	14.75	50	78	32.5	10.35
	30	1082	19.67	80	101	35.0	11.14
	35	1343	24.42	100	128	37.5	12.00
	40	1623	29.50	130	158	39.5	12.57
	45	1911	34.75	160	192	41.5	13.21
	50	2214	40.25	190	229	43.0	13.69
	55	2567	46.67	220	271	44.5	14.17
	60	2943	53.50	240	316	46.0	14.64
	65	3341	60.75	280	366	47.5	15.12
	70	3781	68.75	350	421	49.0	15.60
	75	4235	77.00	400	480	50.5	16.10
	75	4235	77.00	400	480	50.5	16.10
Class 3 23" Circum. 7.32" Diam.	25	674	12.25	50	64	30.0	9.55
	30	921	16.75	60	85	32.5	10.35
	35	1155	21.00	90	108	35.0	11.14
	40	1403	25.50	120	134	37.0	11.78
	45	1664	30.25	130	164	38.5	12.26
	50	1925	35.00	160	197	40.0	12.74
	55	2200	40.00	200	234	41.5	13.21
	60	2512	45.67	220	275	43.0	13.69
	65	2814	51.17	280	320	44.5	14.17
	70	3144	57.17	290	370	46.0	14.64
	75	3506	63.75	370	424	47.0	14.90
	75	3506	63.75	370	424	47.0	14.90

(Continued on next page)

Table 2. Size, weight, volume, board feet of pine poles (Con't.)

Class and Minimum Circumference & Equivalent Diameter of Top - Inches	Length	Weight in Pounds	Volume Cubic Feet	Approx. Log Volume b.f.		Minimum Circumference & Equivalent Diameter at 6 Feet from Butt Inches	
				Scrib.	Int. $\frac{1}{4}$ "	Circum.	Diam.
Class 4 21" Circum. 6.68" Diam.	25	573	10.42	40	54	28.0	8.91
	30	784	14.25	60	72	30.0	9.55
	35	1004	18.25	60	92	32.0	10.19
	40	1219	22.17	100	115	34.0	10.82
	45	1444	26.25	130	142	36.0	11.46
	50	1687	30.67	140	172	37.5	12.00
	55	1934	35.17	160	205	39.0	12.42
	60	2186	39.75	190	242	40.0	12.74
	65	2457	44.67	240	283	41.5	13.21
	70	2732	49.67	260	329	42.5	13.52
Class 5 19" Circum. 6.05" Diam.	25	491	8.92	30	44	26.0	8.28
	30	660	12.00	40	59	28.0	8.91
	35	862	15.67	60	77	30.0	9.55
	40	1059	19.25	90	97	31.5	10.03
	45	1274	23.17	100	120	33.0	10.51
	50	1494	27.17	110	147	34.5	10.98
	55	1719	31.25	130	177	36.0	11.46
	60	1953	35.50	140	210	37.0	11.76
Class 6 17" Circum. 5.41" Diam.	20	284	5.17	20	24	22.0	7.0
	22	339	6.17	30	28	23.0	7.3
	25	422	7.67	30	34	24.0	7.64
	30	550	10.06	40	47	26.0	8.28
	35	743	13.50	50	62	27.5	8.75
	40	921	16.75	60	79	29.0	9.23
	45	1114	20.25	80	99	30.5	9.71
	50	1329	24.17	90	122	32.0	10.19
Class 7 15" Circum. 4.77" Diam.	20	234	4.25	20	18	20.0	6.4
	22	284	5.17	20	21	21.0	6.7
	25	344	6.25	20	26	22.0	7.0
	30	454	8.25	40	37	24.0	7.64
	35	646	11.75	40	50	25.5	8.12
	40	807	14.67	50	64	27.0	8.60
Class 9 15" Circum. 4.77" Diam.	20	202	3.67	10	19	No Butt Requirement	
	22	234	4.25	10	22		
	25	289	5.25	20	28		
Class 10 12" Circum. 3.82" Diam.	30	371	6.75	30	39	No Butt Requirement	
	20	161	2.92	10	12		
	22	188	3.42	20	14		
	25	234	4.25	20	18	Requirement	

NOTE: Class 8 omitted as not ordinarily merchantable.

Volume of piles are as follows: 15' long - 50 board feet, 20' long - 84 board feet, 25' long - 115 board feet, 30' long - 143 board feet, and 35' long - 150 board feet.

ATTACHMENT Q

Table 3. Volume and number of trees per cord of shortleaf and loblolly pine by tree sizes.

Diameter at breast height	Volume per tree	Number of trees per cord
Inches	Cu. Ft.	
4	.8	106.2
5	1.7	50.0
6	3.1	27.4
7	5.2	16.3
8	7.8	10.9
9	10.7	7.9
10	14.1	6.0
11	18.0	4.7
12	22.4	3.8
13	27.1	3.1
14	32.1	2.6
15	37.4	2.3

NOTE: Taken from Occasional Paper No. 71 "Pulpwood and Production Studies in Shortleaf - Loblolly Pine Stands," R. R. Reynolds. So. For. Exp. Sta., New Orleans, La.

ATTACHMENT R

Table 4. Ratio of number of cords per M B.F. by International 1/4",
Scribner and Doyle Log Rules.

DBH (inches)	Int. 1/4"	Scribner	Doyle
	----- Cords per M B.F. -----		
8	4.0	4.4	6.8
9	3.7	4.1	6.8
10	3.4	3.8	6.8
11	3.2	3.6	6.3
12	2.9	3.4	6.2
13	2.7	3.2	5.2
14	2.5	3.0	4.5

NOTE: Taken from So. For. Exp. Station Paper 16, Comparative Stumpage
Prices, April 1952.

ATTACHMENT S

Table 5. Circumference specifications for the various classes of creosoted southern pine poles.

Length of pole	Distance of ground line from butt ^{1/}	Pole Class									
		1	2	3	4	5	6	7	8	9	10
		Minimum top circumference (inches)									
		27	25	23	21	19	17	15	18	15	12
Feet	Feet	Minimum circumference six feet from butt (inches)									
16	3.5					21.5	19.5	18.0			
18	3.5			26.5	24.5	22.5	21.0	19.0			
20	4.0	31.5	29.5	27.5	25.5	23.5	22.0	20.0			
22	4.0	33.0	31.0	29.0	26.5	24.5	23.0	21.0			
25	5.0	34.5	32.5	30.0	28.0	26.0	24.0	22.0		No butt requirement	
30	5.5	37.5	35.0	32.5	30.0	28.0	26.0	24.0			
35	6.0	40.0	37.5	35.0	32.0	30.0	27.5	25.5			
40	6.0	42.0	39.5	37.0	34.0	31.5	29.0	27.0			
45	6.5	44.0	41.5	38.5	36.0	33.0	30.5	28.5			
50	7.0	46.0	43.0	40.0	37.5	34.5	32.0	29.5			
55	7.5	47.5	44.5	41.5	39.0	36.0	33.5				
60	8.0	49.5	46.0	43.0	40.0	37.0	34.5				
65	8.5	51.0	47.5	44.5	41.5	38.5					
70	9.0	52.5	49.0	46.0	42.5	39.5					
75	9.5	54.0	50.5	47.0	44.0						
80	10.0	55.0	51.5	48.5	45.0						
85	10.5	56.5	53.0	49.5							
90	11.0	57.5	54.0	50.5							

^{1/} For use in applying specifications which require a definition of "ground line."

ATTACHMENT U

Table 6 a. - Board foot volume of uneven short logs and long logs scaled as two or more logs. (Scribner Decimal C Log Rule)

Diameter Inside Bark Inches	LOG LENGTHS (feet)																											
	17	19	21	23	25	27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	59	61	63	65	67	69	
-----Volume (cords)-----																												
6	2	2	3	3	3	3	3	3	4	4	6	6	6	7	7	7	8	10	12	12	12	14	14	14	17	18	19	21
7	3	3	3	4	4	4	5	6	7	7	8	10	10	10	12	13	13	14	15	18	18	19	21	23	24	25	26	
8	4	4	5	5	5	5	7	8	9	9	10	12	12	12	15	16	16	17	18	22	22	23	26	27	28	29	32	
9	5	5	6	6	7	7	9	10	12	12	13	14	15	15	18	20	21	22	23	25	25	27	31	34	35	37	39	
10	6	7	7	7	8	9	11	13	14	14	15	17	18	19	22	24	25	26	31	32	35	37	40	41	43	45		
11	7	8	9	10	10	12	14	16	18	19	20	21	22	23	26	30	32	33	34	37	38	40	45	48	50	52	56	
12	9	10	12	12	14	14	18	18	22	23	24	26	27	28	31	34	38	39	40	44	45	48	51	55	59	61	65	
13	11	12	14	16	16	18	21	23	26	28	30	32	32	34	38	41	44	46	48	53	54	57	61	65	68	72	77	

ATTACHMENT V

Table 7. Gross volume of trees of different sizes.
(Scribner Log Rule)

Tree Diameter (inches)	Volume (board feet) by Number of Usable 16-foot Logs								
	1	1½	2	2½	3	3½	4	4½	5
(FC 76)									
10	30	30	40	40	50				
12	40	60	70	80	90				
14	60	80	100	120	140	140	150		
16	90	120	150	170	200	210	230		
18	120	160	200	230	260	290	310		
20	150	200	250	300	340	370	400	430	450
22	180	250	320	370	430	470	510	540	580
(FC 78)									
10	30	40	40	50	50				
12	50	60	80	80	100	100	110		
14	70	90	110	130	150	160	170		
16	100	130	160	180	210	230	250		
18	120	170	210	240	280	310	330		
20	160	210	270	320	360	400	430	460	490
22	190	270	340	400	460	500	550	590	630
(FC 80)									
10	30	40	50	50	60				
12	50	70	80	90	100	110	120		
14	70	100	120	140	160	170	180		
16	100	140	170	200	230	250	260		
18	130	180	220	260	300	330	360		
20	170	230	290	340	390	430	460	490	520
22	200	280	360	420	480	530	580	620	670
(FC 82)									
10	30	40	50	60	60				
12	50	70	80	100	110	120	120		
14	80	100	130	150	170	180	200		
16	110	140	180	210	240	260	280		
18	140	190	240	280	330	360	390		
20	180	240	300	360	410	450	490	530	560
22	220	300	380	450	510	570	620	660	710
(FC 84)									
10	30	40	60	60	70				
12	60	70	90	110	120	130	130		
14	80	110	140	160	180	200	210		
16	110	150	190	220	250	280	300		
18	150	200	250	300	340	370	410		
20	190	250	320	380	440	480	530	560	600
22	230	320	400	480	550	610	660	710	760

NOTE: Taken from "Table for Estimating Board Foot Volume of Timber," USDA publication by Mesavage and Girard.

ATTACHMENT W

Table 16. Volume Table, Standard Cords, Longleaf Pine (Whole Merchantable Stems, Salvage of Tops and Turpentine). Slash Pine (Whole Merchantable Stems and Turpentine). Loblolly Pine (Salvage of Tops).

Diameter inches	1	2	3	4	5	6	7	8	9	10	11	12
4	.003	.009	.014									
5	.009	.016	.022	.029	.035	.042						
6		.024	.032	.040	.048	.056	.064	.072	.080			
7		(.032)	.043	.053	.062	.072	.082	.092	.102			
8		(.042)	.054	.066	.079	.091	.103	.115	.128	.140	.151	.164
9		(.053)	(.067)	.082	.097	.111	.126	.141	.155	.170	.185	.200
10		(.063)	(.080)	.099	.116	.134	.151	.169	.186	.203	.221	.239
11		(.072)	(.093)	.117	.138	.159	.179	.200	.221	.241	.263	.284
12		(.085)	(.110)	.136	.161	.185	.210	.234	.259	.283	.306	.331
13			(.128)	.158	.186	.214	.243	.270	.299	.326	.355	.384
14			(.140)	.180	.213	.245	.278	.310	.343	.376	.408	.439
15							.315	.351	.389	.425	.463	.500
16							.355	.396	.439	.480	.523	.564

Based on 2223 trees taken from 132 units of observation. Standard error of estimate of the mean 1.8 percent. Heavy line shows extent of original data.

NOTE: Taken from "Pulpwood Volume Tables for Southeastern Pines" by Matte 1944. Thesis Duke University. Converted from cubic feet to cords by dividing by 80. Figures in parenthesis are not author's.

ATTACHMENT X

Table 17. Volume Table, Standard Cord. Loblolly Pine (Whole Merchantable Stems).

D.B.H. inches	1	2	3	4	5	6	7	8	9	10	11	12
4	.005	.009	.012									
5	.011	.016	.021	.026	.031	.036						
6		.023	.030	.037	.044	.051	.058	.065	.072			
7		(.031)	.040	.049	.059	.067	.077	.087	.096			
8		(.039)	.051	.063	.075	.087	.100	.112	.124	.136	.148	.160
9		(.050)	(.064)	.079	.094	.109	.125	.140	.155	.170	.186	.201
10		(.060)	(.077)	.096	.115	.134	.153	.171	.190	.209	.229	.248
11		(.070)	(.090)	.114	.138	.160	.184	.206	.229	.253	.275	.299
12		(.081)	(.107)	.134	.161	.189	.216	.244	.271	.299	.326	.354
13				.155	.188	.220	.252	.285	.318	.350	.383	.415
14			(.140)	.179	.216	.254	.291	.330	.368	.405	.444	.481
15							.334	.378	.421	.465	.509	.552
16							.379	.428	.478	.528	.578	.628

Based on 4,378 trees taken from 88 units of observation. Standard error of estimate of the mean 3.1 percent. Heavy line shows extent of original data.

NOTE: Taken from "Pulpwood Volume Tables for Southeastern Pines" by Matte 1944. Thesis Duke University. Converted from cubic feet to cords by dividing by 80. Figures in parenthesis are not author's.

ATTACHMENT Y

TIMBER HARVESTING TRUCK AUTHORIZATION
(See Instructions on Reverse Side)

SHOW THIS CARD TO WEIGHMASTER WITH USED SEAL FOR EACH LOAD

Contractor

Contract No.

Truck Owner

Truck No.

Approved Weight Station

Date Card Issued

Date Card Returned

Issuing Authority (Signature & Title)

SAD Form 2016-R
15 Sep 66

INSTRUCTIONS

1. This card is non-transferable to another contract. Card must be turned in at weight station PRIOR to issuance of new card for another contract. Contractor's field representative is responsible for obtaining new cards.
2. Truck driver is to have card readily available at any time assigned truck is on Government property or hauling Government timber.
3. Card must be turned in at weight station at any time assigned truck ceases operations on Government property.
4. Trucks which have improper cards or deviate from the above instructions will be stopped until the contractor or his field representative is contacted and the necessary corrections made.

ATTACHMENT Z

TIMBER HARVESTING CONTRACT INSPECTION REPORT																
CONTRACT NO.					TOTAL WEEKS ALLOWED CONTRACT					REPORT NO. (WEEK)		ITEM NO.				
WEEKLY HARVEST SCHEDULED VOLUME					WEEK											
Tons					Beginning					Ending						
ITEM	MONDAY		TUESDAY		WEDNESDAY		THURSDAY		FRIDAY							
	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO		
Area Available																
Area Operable (Ground Condition)																
Contractor Working																
Contractor's Field Representative on Reservation																
Amount of Equipment Working	(1) Skidders	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
	(2) Loaders															
(3) Trucks																
DAILY COMMENTARY (CONTINUE ON REVERSE SIDE, IF NECESSARY)																
Contract on Schedule YES NO SAD Form 1913 Issued This Week YES NO (Request for Correction or Improvement of Performance)										VOLUME (TONS) Total Contract _____ Removed This Week _____ Total Removed to Date _____						
INSPECTOR'S SIGNATURE										DATE						

ATTACHMENT AA

DISPOSITION FORM

(AR 340-15)

REFERENCE OR OFFICE SYMBOL	SUBJECT
	Justification and Recommendations for Use of Commercial Scales

TO Chief, Timber Harvesting Sec FROM DATE CMT 1

Justification and recommendations for the use of commercial scales or mill tally for timber products sold under Invitation No. _____ to _____ apparent high bidder, are as follows:

a. Pertinent Information

- (1) Owner's Name:
- (2) Location of Scales:
- (3) Type of Scale:
- (4) Certified by: Dates:
- (5) Hours of Operation:
- (6) Type of Ticket Used:

b. Resume of route to scales, giving distances from contract area to commercial scales or mill to unloading point. If Government scales are available, distances are given from contract area to scales and to unloading point:

c. Recommendations for acceptance or rejection of the conditional bid:

APPROVED:

Resident Forester/Resident Inspector

SAS FL 246
23 JUN 67

DA FORM 2496
1 FEB 62

REPLACES DD FORM 96, EXISTING SUPPLIES OF WHICH WILL BE
ISSUED AND USED UNTIL 1 FEB 63 UNLESS SOONER EXHAUSTED.

U.S. GOVERNMENT PRINTING OFFICE 1962 O-522188

ATTACHMENT BB

BASAL AREAS AND PLOTS PER ACRE

DBH In.	Basal Area Sq. Ft.	Plots per Acre BAF = 10	DBH In.	Basal Area Sq. Ft.	Plots per Acre BAF = 10
4	.087	114.94	18	1.767	5.66
5	.136	75.53	19	1.969	5.08
6	.196	51.02	20	2.182	4.58
7	.267	37.45	22	2.640	3.79
8	.349	28.65	24	3.142	3.18
9	.442	22.26	26	3.69	2.71
10	.545	18.35	28	4.28	2.34
11	.660	15.15	30	4.91	2.04
12	.785	12.74	32	5.59	1.79
13	.992	10.08	34	6.31	1.58
14	1.069	9.35	36	7.07	1.41
15	1.227	8.15	38	7.88	1.27
16	1.396	7.16	40	8.73	1.14
17	1.576	6.35			

For an exact BAF 10.00 prism a 10 in. tree has a plot that is $\frac{1}{18.35}$ of an acre. For other prisms calculate plots per acre by using this formula:

$$\text{Plots per acre} = \frac{\text{Prism BAF}}{\text{Basal Area}}$$

Multiply (DBH)² times .00545 to get Basal Area.

Example: (10") x .00545 = .545 square feet.

or: (16)² x .00545 = 1.395 square feet.

ATTACHMENT CC

PERMIT NUMBER _____

Minor Forest Products Permit

Permission is hereby granted to _____
to cut and remove by _____, 19 ____, the designated timber, estimated
to be _____ cords of _____
(Description of Timber)

for a lump sum consideration of \$ _____.

The said timber is located on _____ as follows:

The Permittee agrees to cut and remove said timber in strict accordance with the following conditions:

1. All designated timber will be used for _____.
2. Payments in the form of Cash, Certified Check or Postal Money Order at no less than the amount stated above, shall be made in advance of cutting.
3. The Permittee agrees to suppress all forest fires occurring on the permit area and to do all within his power to prevent forest fires and to assume full liability for all damages occurring from forest fires resulting from use of this permit.
4. The designated material will be removed in such a manner as prescribed by the undersigned Authorized Representative of the Contracting Officer or his designated representative in order to minimize damage to all seedlings, saplings and to the residual stand of timber. Further, the Permittee will pay double the fair market value for any damages to or removal of the residual, undesignated trees plus necessary administrative costs for determining the amount of this loss.
5. The Permittee agrees to exercise caution in all operations on the property of the United States and to assume full liability for all damage to improvements on said property.

6. The Permittee shall save and hold the United States harmless for all damages to property or injury to all persons arising from the use of this permit or for any damages which may result from the removal of said designated timber by Permittee or through his operations.

7. Purchaser acknowledges that provided this sale is on an active military reservation he shall agree to move men, equipment, and operations at his expense as required by the Government to avoid any conflict with the military mission.

8. Contract Termination. The Government may terminate this contract at any time by giving written notice to the Purchaser. In the absence of any notice of termination, this contract will terminate of its own terms as shown on the face hereof.

Permit issued on this _____ day of _____, 19 ____.

I hereby agree to be bound by all the terms and conditions of this permit.

Authorized Representative of the
Contracting Officer

(Signature of Permittee)

No. Street

City State Zip Code

Area Code Telephone Number

APPENDIX C: RESPONSE TO CERL QUESTIONNAIRE

QUESTION ONE:

What is the present organizational structure for administering the timber harvesting program in your District? (NOTE: This may be presented in chart form showing the lines of authority from the Chief of the Real Estate Division to all personnel having a full- or parttime timber disposal responsibility, including any field offices. Also, give the major duties of the personnel by job title -- grade with number of people and percentage of their time devoted to timber harvesting activities.)

RESPONSE

Baltimore
Chief, Real Estate Div.
Realty Officer GS-14
Chief, M & D Branch
Realty Supervisor GS-13
Realty Specialist GS-05
Ohio-Kentucky Project Office
Realty Supervisor GS-12
Forester GS-09
Forestry Technician GS-05

Mobile
Chief Real Estate GS-14
Chief, M & D Branch GS-13
District Forester/Chief
of Disposal Sec., GS-12
(1) Fort Rucker
Forester GS-09
(2) Fort McClellan
Forester GS-11
Forester Trainee GS-07
(3) Fort Campbell
Forestry Technician GS-09

Little Rock
Chief, Real Estate Div.
Chief, M & D Branch
Forester GS-11

Savannah
Chief, Real Estate
Realty Officer GS-14

Seattle
Chief Real Estate
Chief, M & D Branch
Chief for Res Sec
Forester
For. Res. Clerk

Norfolk
Chief, Real Estate GS-13
Chief, M & D Branch GS-12
Realty Specialist GS-09
Realty Clerk GS-04
(1) Fort Pickett
Sup. Forest Technician GS-08
Forestry Technician GS-05
Forestry Technician GS-05
(2) Fort A. P. Hill
Sup. Forestry Tech. GS-09
3 Forestry Tech., GS-05 each

Fort Worth
Chief Real Estate Division
Realty Officer GS-14
Chief, M & D Branch
Sup. Realty Spec. GS-13
Chief, Military Management Sec.
Sup. Realty Spec. GS-12
Forester GS-11
1 Realty Spec. GS-09
1 Clerk-Typist GS-04
1 Clerk-Typist GS-03

Savannah (cont'd)
 Chief, M & D Branch
 Sup. Realty Spec. GS-13
 Chief, Timber Harvesting Sec.
 Forester GS-12
 Realty Clerk GS-06
 (1) Fort Bragg
 Sup. Forester Tech GS-11
 Forester GS-09
 2 Forester Tech GS-07
 1 General Clerk GS-06
 (2) Fort Jackson
 Forester GS-07
 (3) Fort Gordon
 Forester Tech GS-05
 (4) Fort Stewart
 Sup. Forester GS-11
 3 Forester Tech GS-07
 1 Admin Aid GS-07
 1 Forestry Tech GS-06
 (5) Fort Benning
 Sup. Forestry GS-11
 1 Admin Aid GS-07
 1 Forestry Tech GS-07
 2 Forestry Tech GS-06

OMAHA

Commander, Facilities Engr and Agronomist or Forester (Army Bases or Army Plants or Depots)

TRADOC or FORSCOM or ARRCOM

Division Engineer (MRD)

District Engineer (Omaha District)

Chief, Real Estate Division, GS-14

Chief, Management & Disposal Branch, GS-13 (1%)

Chief, Disposal Section, GS-12 (15%)

Realty Spec., GS-11 (5%) Clerk-Steno (2%) GS-04

Chief, Appraisal Branch (1%) (GS-13)

Reappraisal Branch - Appraiser, GS-11 (2%)
 or Contractor Appraiser

Reappraisal Branch - Review Appraiser - GS-12 (1%)

INSTALLATION

Facilities Engineer or	Commander's Representative
Realty Spec - GS-09 (10%)	Forester GS-07 to GS-09 (10%)
or	or
Agronomist GS-09	Agronomist GS-07 to GS-09

QUESTION TWO:

What were the total operational costs (as authorized under Program 7) for FY's 74 through 76?

<u>DISTRICT</u>	<u>FISCAL YEAR</u>	<u>MILITARY</u>	<u>CIVIL</u>	<u>TOTAL</u>
Baltimore	74	77,000	0	77,000
	75	61,600	0	61,600
	76	69,000	0	69,000
Seattle	74	113,000	9,974	122,974
	75	120,000	0	120,000
	76	123,500	0	123,500
	76T	31,000	0	31,000
Mobile	74	61,375	800	62,175
	75	79,000	2,975	81,975
	76	77,100	18,168	95,268
Norfolk	74	82,000	0	82,000
	75	152,000	0	152,000
	76	164,000	0	164,000
Ft. Worth	74	92,480	0	92,480
	75	90,254	0	90,254
	76	82,014	0	82,014
	7T	6,258	0	6,258
Omaha	74	5,000	0	5,000
	75	5,400	0	5,400
	76	7,000	0	7,000

<u>DISTRICT</u>	<u>FISCAL YEAR</u>	<u>MILITARY</u>	<u>CIVIL</u>	<u>TOTAL</u>
Savannah	74	358,308	29,066	387,374
	75	409,873	119,114	529,347
	76	404,128	70,709	474,837
Little Rock	74	9,996	2,408	12,404
	75	15,224	4,077	19,301
	76	24,000	7,255	31,255
TOTAL (average)	=	2,720,510 (906,837)	264,906	2,985,416

<u>Fiscal Year</u>	<u>Military</u>	<u>Civil</u>	<u>Total</u>
74	799,159	42,248	841,407
75	933,351	126,525	1,059,877
76	950,742	96,132	1,046,874
76T	37,258	0	37,258

QUESTION THREE:

What is your timber disposal budget for FY 77 for servicing military and civil projects?

	<u>MILITARY</u>	<u>CIVIL</u>	<u>TOTALS</u>
Baltimore	56,000	0	56,000
Seattle	130,000	0	130,000
Mobile	85,000	20,000	105,000
Norfolk	143,000	15,000	158,000
Ft. Worth	98,000	0	98,000
Omaha	8,000	0	8,000
Savannah	444,000	55,000	499,000
Little Rock	20,000	8,000	28,000
TOTALS =	984,000	98,000	1,082,000

QUESTION FOUR:

List the installations serviced who provide fiscal year availability information that can be used in planning the coming fiscal year's workload.

<u>Baltimore</u>	1) Fort Knox	via blanket declaration
	2) Fort Meade	

Seattle

Fort Lewis

Mobile

- 1) Fort Rucker - TRADOC
- 2) Fort McClellan - TRADOC
- 3) Fort Campbell- FORSCOM

Norfolk

- 1) Fort A. P. Hill, VA
- 2) Fort Pickett, VA
- 3) Fort Lee, VA
- 4) Fort Eustis, VA
- 5) Radford Army Ammunition Plant, VA

Ft. Worth

Fort Polk, LA

Omaha

- 1) Atterbury, RFTA, IN
- 2) Badger AAP, WI
- 3) Fort Benjamin Harrison, IN
- 4) Fort Carson, CO
- 5) Fort McCoy, WI
- 6) Indiana AAP, IA
- 7) Jefferson Proving Grd, IN
- 8) Newport AAP, IN
- 9) Custer, RFTA, MI
- 10) Savanna, AD, IL

Savannah

- | | |
|-----------------|--------------|
| 1) Fort Stewart | Clark Hill |
| 2) Fort Benning | Hartwell |
| 3) Fort Bragg | RB Russell |
| 4) Fort Gordon | Philpott |
| 5) Fort Jackson | John H. Kerr |
| 6) Sunny Point | |

Little Rock

Pine Bluff Arsenal

QUESTION FIVE:

In regular timber availabilities from the serviced installations, describe any unusual conditions which have proven difficult to administer under normal sales contracts.

BALTIMORE - (1) Condition of tree markings deteriorates in a sale area by the time a declaration reaches District; (2) Time specified for removal is not always adequate; (3) Unrealistic time limits are imposed in old ranges where timber is infested with metal.

MOBILE - The District works closely with installation Forest Management; only necessary and practicable silvicultural actions and those in support of military training are required under contracts/provisions made, and systems are worked out for those actions which are required.

NORFOLK - (1) Military training and range firing force contractors to stop harvesting because of military training, causing ill feeling between contractor and Government and eventually limiting number of prospective purchasers; (2) The expense required to process and administer a small sale is equivalent to that of large volume sale, but monetary return is minimal.

FORT WORTH - (1) Strict imposition of utilization standards causes considerable loss in a Unit Price Sale. Example: Utilization standards require purchaser to cut 8 in. top diameter for pine sawtimber. When a purchaser has a demand for certain log lengths he will buck them up in the woods. Long lengths may not coincide with standards and a good deal of merchantable wood may be left in the tops, which could amount to considerable loss in a Unit Price Sale; (2) Clean-up and cosmetic requirements are difficult to accomplish; (3) When a large percentage of culls is marked, it is difficult to get all marked trees cut; (4) Time specified for removal is not always adequate; (5) At Fort Hood, there has been difficulty in determining if correct amount of flat cutting has been accomplished due to the inaccessibility of the impact area.

OMAHA - None.

SAVANNAH - Utilization of topwood material to a 4-in. minimum diameter limit has been difficult in those serviced installations with a poor pulpwood market.

LITTLE ROCK - Very stringent security and safety regulations sometimes cause difficulties, i.e., "no smoking" areas, low speed zones, areas where gas masks are required, etc.

SEATTLE - (1) 100 percent slash clean-up areas; (2) Protection of leaf trees, especially during thinning; (3) Adequate burning and disposal of slash concentrations; (4) Spreading ash from burned slash concentrations.

QUESTION SIX:

(1) What are the appraisal procedures used in appraising timber sales? (For example, is the minimum acceptable appraised price the objective of the appraisal report, or is the fair market value concept the objective of the appraisal report?) (2) What is the title and grade of the person who does the appraisal work for the timber sales in your District? (3) What is the title and grade of the person who reviews these timber sale appraisals? (Please provide a typical sample of a timber sale appraisal report.)

*BALTIMORE - (1) Minimum acceptable appraisal, (2) District Forester, GS-09, (3) None.

*SEATTLE - (1) Minimum acceptable appraisal, (2) Forestry Technicians GS-09, GS-07, (3) Chief, Forestry Research Section, GS-11, and Appraisal Branch, Real Estate Division personnel, GS-12.

*MOBILE - (1) Conversion Return Method is used for appraising minimum acceptable stumpage price (manufacturer costs including logging, depreciation and overhead) are subtracted from adjusted selling price of the respective finished forest product to get conversion return; (2) Professional field foresters GS-09 through GS-11; (3) District Forester, GS-12.

*NORFOLK - (1) Fair Market Value; in most cases, this is the minimum bid Government will accept, (2) Supervisor Forestry Technician GS-09 or GS-08; (3) Realty Specialist GS-09.

FORT WORTH - (1) Appraisals are by comparable sales. Volume per acre and volume per tree of several sales are compared with the appraised timber. The appraiser considers the appraised value to be *minimum acceptable value*; (2) Forester, GS-11; (3) No response.

*OMAHA - (1) Fair Market Value; (2) Appraisals are by contracted local foresters; (3) Staff Appraiser, GS-11.

SAVANNAH - (1) Residual method used to determine minimum acceptable bid; (2) Forester GS-09 or higher; (3) Chief, Timber Harvesting Section at the District office, GS-12.

LITTLE ROCK - (1) Fair Market Value; (2) Forester, GS-11; (3) Reviewing Appraiser, GS-12.

QUESTION SEVEN:

What is the unit of measurement utilized in timber sales in your District? For example: (ton basis, board foot measurement using Scribner scale, standard cord, unit, etc.)

BALTIMORE - Many different units of measure are utilized including ton basis, board foot, standard cord, depending on species and size of trees.

SEATTLE - Primarily Unit Price with some board foot and two study sales utilizing ton basis.

*Indicates District has provided sample of timber sale appraisal report.

MOBILE - Depends on type of timber and region: (1) Lump Sum Sales are based on board foot (Scribner) and standard cords, (2) Unit Price Sales are based on weight and stick-scale.

NORFOLK - (1) Fort A. P. Hill: Sold by ton after converting board feet based on International Log Rule (ILR), 1/4 in. Kerf, (2) Fort Pickett: Sold by ton after converting board feet based on ILR 1/4 in. Kerf, (3) Fort Lee: Sold by Lump Sum using estimated board feet and standard cords based on ILR 1/4 in. Kerf. (5) Civil Sales: Sold per thousand board feet and standard cords based on ILIR 1/4 in. Kerf, but possibly will be sold by ton in the future.

FORT WORTH - Ton, cord, board foot in Lump Sum Sales and lots.

OMAHA - Board feet by using Scribner scale cords.

SAVANNAH - Scribner scale (for sawtimber); weight (for pulpwood, sawtimber, miscellaneous products); standard cord (for pulpwood).

LITTLE ROCK - Standard cord, ton, and Scribner board foot.

QUESTION EIGHT:

In your opinion do you feel that the Lump Sum method of sale is a reasonable way of disposing of timber on serviced installations? Note some of the problems you might have encountered on Lump Sum Sales during the past 3-year period.

BALTIMORE - Proved to be best method for District; no problems.

SEATTLE - Generally not best method, except in some small sales. Problems occurring are: (1) Inaccuracy of cruises - large amount of defect from many different sources; (2) Military interference in the area; (3) Inability to add volume from blowdown, decreased, or military or logger damaged trees.

MOBILE - Lump Sum preferred when industry is accustomed to buying in bulk and an accurate cruise is furnished by the installation. However, if timber is suspected of containing metal and volume estimates are questionable or industry buys on Unit Price, then Unit Price is preferred.

NORFOLK - Not recommended as primary method; prefer Unit Price except in cases where District personnel are not assigned, or private weight scales are not available. Some problems arising from Lump Sum sales: (1) Cutting of illegal trees within and outside contract boundary; (2) monetary loss suffered when an availability is lower than the harvested volume; (3) Monetary loss when harvested volume is below availability and subsequent damage to Contractor/Government relations; (4) High

grading: A contractor harvests the more valuable trees and leaves the poorer trees unharvested. The contractor could have marketed the high-graded timber at a price that would offset default of his performance bonds.

FORT WORTH - Perfectly acceptable; no problems.

OMAHA - Yes; no problems.

SAVANNAH - An invaluable method; no problems.

LITTLE ROCK - Not the best method; Unit Price Sale should be used when at all possible. Lump Sum Sales tend to discourage or eliminate small businesses, and bidders tend to bid lower to maintain a safety factor. Usually, lump sum sale is used only when 100 percent tally is made of product to be sold, or for small emergency-type sales.

ALL DISTRICTS - 4 Districts favor Lump Sum
1 District prefers Lump Sum in some cases
3 Districts prefer other methods

QUESTION NINE:

(1) Indicate the methods in which the serviced installations designated their available timber for disposal; (2) Have you encountered any problems in the way that the serviced installation has designated the available timber for harvest over the past 3 years?

BALTIMORE - (1) A Declaration of Availability is forwarded to the District; (2) Timber has been of no retention value for Army use (excessed) and some has been of the salvage time from wind blow-down and construction areas.

SEATTLE - (1) Given by grade and volume of each material; (2) No problems - District works closely with the DFAE Forestry personnel.

MOBILE - (1) FORSCOM and TRADOC report a blanket availability at the beginning of each fiscal year. Volume statements are furnished at the time each increment is marked and offered for sale. DARCOM reports a complete availability with each volume statement which occurs generally no more than two times a year. Civil availabilities are made only after close coordination between Timber Harvesting personnel and Resource Management personnel. Volume and sale requirements are forwarded by disposition from the resource manager, through Operations Division to Real Estate Division for sale; (2) Solutions have been worked for any problems that have arisen.

NORFOLK - (1) Timber is designated as follows for each installation:

Fort A. P. Hill - All availabilities have a standard clause stating that timber is available for Lump Sum Sale. Method of disposal is determined by the District.

Fort Pickett - Method of sale is designated as either Unit Price or Lump Sum. District usually concurs with the decision.

Fort Lee - Method of disposal is by Lump Sum Sale and unless specific conditions exist, the District concurs.

Fort Eustis - Designation method of sale is by Lump Sum bid and since there is a high rate of metal infestation, the District advertises the timber as metal-infested and by Lump Sum bid. (2) District has experienced no problem in this area.

FORT WORTH - (1) Ninety-five percent or more sales are of individually marked trees. Remaining sales are marked by boundary only or leave trees are marked. Boundaries of all sales are generally well defined and marking is attractive to bidders; (2) Some bidders at one installation have complained of the large percentage of marked culls.

OMAHA - (1) Serviced installations designate their available timber for disposal by a "Declaration of Timber Available for Harvest" which includes disposal instructions, drawings showing timber location, estimated volume tabulation sheets, etc.; (2) No problems.

SAVANNAH - (1) Timber designated as follows: (a) Marking boundaries around clear cut areas; (b) Marking trees to leave and harvest unmarked; (c) or for single tree selection by marking with a spot of paint at stump and at breast height; (2) No problems.

LITTLE ROCK - (1) Timber to be sold is marked with paint; however, timber has been sold where trees to be left were marked and timber was sold by diameter limits; (2) No problems.

QUESTION TEN:

What are some of the problems that you have encountered in the use of your invitation for bids? (For example, in damages that have been assessed to the purchaser, did the contract adequately cover this matter and were the damages appraised reasonable when comparing private estimate of damages and Government estimates. Please furnish copies of invitation used on your Unit Price Sales and Lump Sum Sales for both civil and military projects.)

*BALTIMORE - District has found that ordinary contractor or bidder has problems understanding portions of the invitation, for example, the paragraph on default.

SEATTLE - No major problems; contract is versatile and is upgraded each year.

*MOBILE - No response.

NORFOLK - No problems that could not be adequately covered by terms and conditions contained within invitation for bids.

FORT WORTH - Satisfactory except: (1) Bid and Award page has no space for bidder to enter more than one bid, nor does the acceptance by the Government indicate which bids are accepted when there is more than one bid; (2) Condition II FI and Condition III B2 do not agree as to the disposition of the performance deposit in the event that a purchaser is placed in default; (3) The purpose of the bid deposit and its disposition is not clearly stated; (4) The relationship between bid deposit, advance payments, billings and reports is not clear; (5) Specific items are not easily located because of too much division into numerous paragraphs.

*OMAHA - No problems.

*SAVANNAH - No problems.

*LITTLE ROCK - Problems arose due to poor timber market conditions in FY 74 making it necessary to grant an extension of time. Present invitation thus contains a clause which allows a charge to be made for an extension of time.

QUESTION ELEVEN:

Does your District administer firewood sales on serviced installations? If so, please provide samples of the contract on procedures used. Has your District issued any free-use permits on civil projects and if so, please furnish a copy of the permit used and procedures.

BALTIMORE - No.

SEATTLE - Yes, sample provided; no free use permits.

MOBILE - No, it's better handled through installation property disposal offices.

NORFOLK - No.

*Indicates District has furnished a copy of invitation for bid.

FORT WORTH - No.

OMAHA - No; however, installation commander has authority to dispose of firewood (up to \$300.00 per contract not to exceed \$4,000.00 per year) upon posting of notices of availability to local people.

SAVANNAH - No.

LITTLE ROCK - No.

QUESTION TWELVE:

Indicate some of the difficulties that you have encountered in the disposal of timber on construction projects where time or other factors have had an impact on the District's ability to remove or salvage timber in an efficient manner. Have major construction projects been coordinated well in advance to allow disposal of timber by sale? Indicate how the timber can be more efficiently disposed of on construction sites to salvage a valuable resource.

BALTIMORE - No timber has been disposed of at the site of civil works project for 4 or 5 years.

On military installations, the District has been able to salvage timber and has been allowed to do so before construction. In the past, when timber was available, the installations made a report of availability and a copy was sent to the District. We highly recommend that this practice be reinstated.

SEATTLE - (1) Main difficulties have been administering the sale and the distances involved. (2) Coordination on construction projects has been inadequate. Forestry people should be on ground floor of process including pre-award and after-award briefings.

MOBILE - Lack of sufficient time has been the primary problem -- in some instances, the acquisition of the site and the letting of the clearing contract were so close that there was no time for making a normal timber sale. The District has used stack piling of merchantable timber by the clearing for the alternative of later sale by the Government. Unit sales by weight are employed in these cases.

NORFOLK - No serious problems with civil projects; however, with some other Government contractors that are following up a timber contract, the definition of "clean up" has been in dispute.

Timber can be efficiently removed from construction sites by having other branches of the District notify the Real Estate Division of upcoming construction projects in which timber may be available. The sooner the notification, of course, the more time for removal.

FORT WORTH - There exists a problem in the District concerning time element for timber disposal. The Real Estate Division is made aware of construction too late to have sufficient time for disposal for timber by sale. This raises questions such as: Who identifies clearing limits? Who pays cost of disposal? Who gets credit for the income from sales? If disposal increases cost of construction, who pays? A possible solution may be to have the construction contractor pay the Real Estate Division the appraised fair market value for the timber and dispose of it as he sees fit.

MAHA - No problems.

SAVANNAH - Salvage of timber on construction projects is a problem because of the compressed time frame, causing inefficient harvest of timber. Prices received for material are usually below fair market value.

LITTLE ROCK - There is a problem of lack of advance notice and insufficient time. As a suggestion, we feel that a timber appraisal be included as part of the preliminary planning for construction sites.

QUESTION THIRTEEN:

Please state any problem areas in timber disposals with regard to current regulations, coordination with the serviced installations, or suggestions, ideas, etc., for improving timber disposal (harvesting) services to the Installation/Project.

BALTIMORE - (1) In declaration of timber availability, the installation needs to investigate more fully to insure timber is not metal-infested and to coordinate with the training sessions to insure a contractor access to sales area; (2) The installation should provide sales areas that are near main roads to ease accessibility for logging operations.

SEATTLE - (1) It would be useful to have an Army-wide Timber Disposal Manual. Regulations are inconsistent and diverse; (2) We would suggest a new chain of command independent of installation command. The new chain, subject to installation command review, would avoid abuse of the forestry program, cut operating cost, and prevent abuse of program funds.

MOBILE - None.

NORFOLK - None.

FORT WORTH - (1) Control of Unit Price Sales because more loads are reported by contractors than are recorded on installation control sheets; (2) Lump Sum Sales, by eliminating by weighing, reports, and rigid

control would help reduce red tape of buying timber at ammunition plants and depots; (3) The District could better serve the installation by placing a representative in closer proximity to installation; (4) A current ruling on exchange of goods for services with do's and don'ts would be useful.

OMAHA - None.

SAVANNAH - Installations often fail to submit timber availability on a continuing basis. Sporadic submittance causes an unequal demand on the field staff.

LITTLE ROCK - None.

QUESTION FOURTEEN:

List the following information on Army and Civil installations serviced by your District. Suggested format that you can use is as follows:

Installation/Project	Number Acres (Forested)	Resident Staff Available for Installation/Project Management & District Timber Harvesting Operations	
		Project Staff	District Staff
<u>BALTIMORE</u>			
Fort Knox	60,751	no	yes
Fort Belvoir	4,156	no	no
Aberdeen Proving Ground	7,002	no	no
Lexington, BGAD	1,500	no	no
Letterkenny, Army Depot	10,728	no	no
Ravenna AAP	14,333	no	no
Fort Meade	7,400	no	no
<u>SEATTLE</u>			
Fort Lewis	49,000	yes	yes
Howard Housen Dam	259	no	yes
Mud MTN Dam		no	yes
<u>MOBILE</u>			
(1) Fort Rucker	43,106	yes	yes
(2) Fort McClellan	29,749	yes	yes
(3) Fort Campbell	49,439	yes	yes

Installation/Project	Number Acres (Forested)	Resident Staff Available for Installation/Project Management & District Timber Harvesting Operations	
		Project Staff	District Staff
(3) Fort Campbell	49,439	yes	yes
(4) Volunteer AAP	5,571	yes	yes
(5) Milan AAP	6,071	yes	yes
(6) Holston AAP	3,828	yes	yes
(7) Anniston AD	14,003	yes	yes
(8) Camp McCain	3,000	no	yes
(9) Camp Shelby	1,200	no	yes
(10) Redstone Arsenal	11,074	yes	yes
(11) NASA (MTF)	21,000	no	yes
(12) Allatoona Lake	25,914	no	yes
(13) Lake Sidney Lanier	19,906	no	yes
(14) Carters Lake	4,608	no	yes
(15) West Point Lake	32,100	no	yes
(16) Columbia Lake	2,260	no	yes
(17) Walter F. George Lake	35,500	no	yes
(18) Lake Seminole	27,806	no	yes
(19) Jones Bluff L&D	13,018	no	yes
(20) William "Bill" Dannelly Lake	17,711	no	yes
(21) Pearl River	2,525	no	yes
(22) Claiborne Lake	2,761	no	yes
(23) Black Warrior River and Tombigbee Lake	92,206	no	yes

(Includes the
following projects:)

Warrior L&D
Bankhead L&D
Holt L&D
Demopolis Lake
Gainesville L&D
Columbus L&D
Aberdeen L&D
Teen-Tom Canal
Aliceville L&D
Amory L&D

Total forested acres, all installations: 464,356

NORFOLK

Fort A.P. Hill	57,589	no	yes - 4
Fort Pickett	26,091	no	yes - 3
Fort Lee	2,500	no	no
Fort Eustis	2,752	no	no
Radford AAP	2,622	no	no

Installation/Project	Number Acres (Forested)	Resident Staff Available for Installation/Project Management & District Timber Harvesting Operations	
		Project Staff	District Staff
Radford AAP	2,622	no	no
Gathright Lake	2,000	no	no
Albemarle & Chesapeake Canal	1,200	no	no
<u>FORT WORTH</u>			
Fort Polk, LA	65,000	yes	no
Red River Army Depot, TX	27,783	yes	no
Louisiana Army Ammunition Plant	11,878	yes	no
Longhorn Army Ammunition Plant	7,570	yes	no
B. A. Steinhagen	7,675	yes	no
<u>SAVANNAH</u>			
Ft. Stewart	246,398A	yes	yes
Kings Bay	4,700A	yes	yes
Ft. Benning	134,098A	yes	yes
Ft. Bragg	118,179A	yes	yes
Sunny Point	8,200A	yes	yes
John H. Kerr	40,000C	yes	yes
Philpott	2,800C	yes	yes
B. E. Jordan	17,500C	yes	yes
W. Kerr Scott	1,470C	yes	yes
Falls Lake	8,000C	yes	yes
Ft. Gordon	53,941A	yes	yes
Clark Hill	75,000C	yes	yes
Hartwell	17,776C	yes	yes
R. B. Russell	26,000C	yes	yes
Ft. Jackson	41,632A	yes	yes
Charleston AD	1,000AD	yes	yes
<u>LITTLE ROCK</u>			
Fort Chaffee	1,350A	no	yes
Pine Bluff Arsenal	11,000A	yes	yes
Arkansas River	1,400C	no	yes
Blue Mountain Lake	6,250C	no	yes
Bull Shoals Lake	33,500C	no	yes
Clearwater Lake	10,000C	no	yes

Installation/Project	Number Acres (Forested)	Resident Staff Available for Installation/Project Management & District Timber Harvesting Operations	
		Project Staff	District Staff
Clearwater Lake	10,000C	no	yes
Lake Dardanelle	3,300C	no	yes
Nimrod Lake	8,500C	no	yes
Norfork Lake	26,000	no	yes

QUESTION FIFTEEN:

Attached is a form that you may use in providing information on the number of contracts, the range of contract values, the type or the method of sale involved, either Unit Price or Lump Sum, and name of the Army and civil projects serviced. In lieu of this form you may list your contracts, amounts of contracts and method of sale by the Army and civil projects serviced for fiscal years 74 through 76. Be sure to make this listing by fiscal year.

Responses to the above question are listed in Table C1.

Table C1

Combined No. of Contracts for all Districts
and Amount Broken Down by Fiscal Year

	<u>No. of Contracts</u>	<u>Receipts (\$)</u>
FY 74	372	8,292,664
FY 75	316	6,496,955
FY 76	<u>375</u>	<u>9,354,838</u>
TOTAL	1064	24,144,457

CERL DISTRIBUTION

Chief of Engineers
ATTN: DAEN-REP (3)
ATTN: DAEN-RD
ATTN: DAEN-ASI-L (2)
ATTN: DAEN-MPO-B (2)

U.S. Army Engr Divisions
ATTN: Chief, Real Estate
Lower Mississippi Valley
Missouri River
New England
North Atlantic
North Central
North Pacific
Ohio River
South Atlantic
South Pacific
Southwestern

U.S. Army Engr Districts
ATTN: Chief, Real Estate
New Orleans
Omaha
Norfolk
Baltimore
Seattle
Mobile
Savannah
Ft Worth
Little Rock
Tulsa

Ft Monroe, VA 23651
ATTN: ATEN-FE-BG

Ft McPherson, GA 30330
ATTN: AFEN-FES

Rock Island Arsenal, IL 61299
ATTN: DRCIS-RI-IB

Defense Documentation Center (12)

Moore, Alan W

Development of guidelines for the Corps of Engineers timber harvesting program/
by A. W. Moore, G. A. Parsons, R. E. Ramsson -- Champaign, IL : Construction
Engineering Research Laboratory ; Springfield, VA : available from NTIS, 1979.
169 p. ; 27cm. (Technical report ; P-102)

1. Logging. I. Ramsson, Robert E. II. Parsons, Guy A. III. Title. IV.
Series: U.S. Army Construction Engineering Research Laboratory. Technical report ;
P-102.